ASHRAE Exposition Reports . . . . . Next Week

AIR CONDITIONING HEATING & REFRIGERATION NEWS

The Newspaper of the Industry

RESIDENTIAL — COMMERCIAL — INDUSTRIAL

February 20, 1961

Vol. 92, No. 8, Serial No. 1,665

Reentered as second class matter October 3, 1936, at the post office at Detroit, Mich., under the Act of March 3, 1879.

Subscription Price, $6 Per Year (U. S. and Canada). Foreign: $10.00 Per Year.

Trade Mark Registered U.S. Patent Office. Copyright 1961, by Business News Publishing Co.

✓ INSIDE THIS ISSUE

UTILITY OFFERS CENTRAL HEATING-COOLING in Hartford business area. Idea may furnish new source of income for utilities 12

LOW-BOY FREE STANDING fan-coil unit cools, heats apartments in building with floor-to-ceiling glass 18

PACKAGED MULTIZONE AIR CONDITIONERS — How one mfr. designs new line (4) 19

HERMETIC TRENDS AND REQUIREMENTS (2) 22

EDITORIAL 14

WHAT'S NEW 16

WORLD TRADE 20

INDUSTRY CALENDAR 22

PATENTS 24

Worthington Bows Transport Unit

CHICAGO — Worthington Corp. of Harrison, N. J., one of the nation's largest producers of air conditioning, refrigeration, and heavy industrial equipment, has announced its entry into the transportation field with a refrigerating-heating system applicable for use on highway and railroad piggyback trailers.

According to Randall W. Johnson, manager of the company's new Transportation Section of the Air Conditioning Div., the new truck refrigeration unit has undergone tests

(Continued on Page 23, Col. 3)

Whirlpool Adds 3 Room Unit Models

ST. JOSEPH, Mich. — The 1961 line of "RCA Whirlpool" air conditioners consists of 19 different units in five separate model designs, it was announced recently by Whirlpool Corp.

Linc Larkin, general manager of Whirlpool's air conditioner sales division, said three entirely new models—"Metropolitan," "Super," and "Casement"—have been added to the "Custom" and "Deluxe" series and the luxury remote control model which was introduced by Whirlpool last year.

"The three Metropolitan models feature simple installation, capacities of 6,600, 8,500, and 9,000 Btu, low sound level, two fan speeds, thermostat, exhaust, and pull-and-turn air direction louvers which allow air to be directed anywhere in the room," it was stated.

"Each Metro is equipped with a special mounting kit consisting of strong, durable, aluminum-extruded sections completely pre-assembled on the unit. The heavy plastic roll-out sections of the mounting kit adjust instantly and provide a permanent, secure mount that is exceptionally weatherproof.

"Cabinet is of heavy Bonderite-processed steel protected with three coats of baked enamel. The front, finished in

(Continued on Page 4, Col. 1)

Inside Dope

By GEORGE F. TAUBENECK

Learn to live and laugh — thus delay your epitaph

'Computerese'

Are you "hep" when luncheon conversations turn to computers?

Does the teen-age genius in your family like to test your parental sanity by rattling off such free-wheeling terms as binary coded decimal, mnemonic code, binary digit, binary scale and radix?

Do you suspect that such simple English words as "address, drum gate, bit, and patch" mean more than they used to mean?

You, Too, Can Translate

If so, you'd better brush up on your "computerese," warns the Minneapolis-Honeywell Regulator Co.

Aware of the baffling technical jargon surrounding electronic brains, this firm has published a pocket-size 22-page glossary intended to make computer language more intelligible to the layman.

Entitled: "Do you Talk 'Computerese?'" this booklet defines some 82 terms which the instrument producer's own engineers have helped to create in building industrial computers.

M-H to the Rescue

Honeywell expects the glossary to rival its popular "Automation Dictionary," produced five years ago.

That booklet, still in demand, took the secrecy out of "Engineeringese"—the language by which the engineering profession talks to itself—and made such terms as sinusoidal, hysteresis, feedback and optimalization more palatable—if that really is possible.

"Nowadays, however, we get a large number of blank stares

(Continued on Page 8, Col. 1)

Fraser & Johnston Equipment Gives Flexibility

SAN FRANCISCO—Fraser & Johnston Co. here is introducing what it terms "a new concept in the gas-fired furnace—evaporator coil combinations.

"The CA upflow and the RA downflow have blowers, casings, and coils sized for quiet operation," the company stated. "In the same casing, integral with the cooling, is inserted a gas furnace of capacity to fit the need of the installation.

"In this way, many combinations of heating and cooling which were previously not available may be had, such as 4 tons of cooling and only 100,000 Btu of heating. They provide great flexibility in heating and cooling, and, unlike heat pumps, can provide the most heat when weather is coldest and less heat when weather is warm.

"In addition, these furnaces as model CN and RN are offered

(Continued on Page 23, Col. 1)

RACCA Plan Seeks More Service Work

CHICAGO — A plan whereby refrigeration and air conditioning contractors who have lost out on maintenance and service work commitments due to jurisdictional conflict by a craft union not affiliated with the United Association can fufill such contracts was announced by Walter McCarty, RACCA National president.

According to McCarty, the plan calls for the association to present an appeal of the affected contractor to the President's Committee on Contract Maintenance composed of representatives of the 13 international crafts.

With the matter presented to

(Continued on Back Page, Col. 1)

Hunt Will Head New McQuay Coast Plant

MINNEAPOLIS — Contracts for building the new West Coast manufacturing plant for McQuay, Inc., at Visalia, Calif., are being let, and the appointment of Harold T. Hunt as plant manager was announced here by B. E. James, president.

H. T. Hunt

The company manufactures air conditioning, heating, refrigeration, and ice

(Continued on Page 23, Col. 4)

In the News This Week

Predict 5% Rise In Cooling Output

WASHINGTON, D. C.—Unit production of air conditioning and commercial and industrial refrigeration equipment in 1960 ran about 5% greater than in 1959, and a like increase is estimated by industry sources for 1961. So states an estimate made and reported last month by the General Industrial Equipment and Components Div., U. S. Department of Commerce.

In the unitary air conditioning equipment field, about 315,000 year-round air conditioners, except window and wall units, were sold in 1960 (this estimate is about 15,000 less than reliable industry sources put it). Of these, about 205,000 were installed in residences and the remainder in stores, offices, and commercial and industrial establishments. This represented a 10% increase in all types of installations over 1959, said the report.

At the same time, it was stated, inventories of this category of equipment increase by some 50,000 units to about 144,000 units, or a 4-month supply. If inventories remain at about the same level, production

(Continued on Back Page, Col. 1)

Judge Dismisses Suit Against New Orleans BBB

NEW ORLEANS — A civil district court judge has dismissed an injunction suit filed against the Better Business Bureau by three air conditioning and refrigeration groups.

The trade associations, all headquartered in New Orleans, had been seeking a preliminary injunction against the BBB, asking that the bureau be enjoined from interfering with contractor operations in the city.

The contractors said advertisements by the BBB "warning" the public that complaints had been received against "certain air conditioning and refrigeration repairmen" were damaging.

Judge Alexander E. Rainold ruled the advertisements were not libelous. He said they were general in nature and not aimed at any individual.

The effect of the advertisements was only to warn the open public to contact the BBB before entrusting air conditioning and refrigeration units to particular repairmen, the judge said.

Plaintiffs in the suit were Louisiana Refrigeration & Air

(Continued on Page 23, Col. 2)

Cooling Vital, Hospital Administrator Says

SYRACUSE, N. Y.—"A well designed air conditioning system tailored to the specific needs of a hospital has become a basic feature of any hospital built to modern standards," writes John L. Brown in a forthcoming textbook for hospital administrators.

Brown, administrator of the Community Hospital of Greater Syracuse, is one of the contributors to the book entitled "Modern Concepts of Hospital Administration," which will be published next fall by W. B. Saunders Co. The editor is Dr. Joseph K. Owen, administrative consultant for the District of Columbia General hospital.

"While it is not wise in a general presentation such as this chapter to make an unqualified recommendation concerning any design feature of a hospital, complete air conditioning is an exception," Brown says.

It aids in patient recovery, and is "clearly therapeutic" in the treatment of many ailments, he writes. It also increases the efficiency of staff personnel, makes good housekeeping easier and less expensive, prevents the spread of odors and contributes to steady occupancy.

Drawing on his experience as

(Continued on Back Page, Col. 2)

Republic-Transcon, Mathes Deal Near

LOS ANGELES — A spokesman for Republic-Transcon Industries, Inc., last week reportedly indicated that negotiations with Glen Alden Corp. for the acquisition of its Mathes Co. division were expected to be completed shortly.

Earlier, it was reported that Republic-Transcon had offered Glen Alden 750,000 new common shares for Mathes. The transaction, it was said, would increase Republic-Transcon's outstanding common shares from 1,810,913 to 2,560,913 and give Glen Alden a 30% minority interest in the Los Angeles firm. Mathes makes air conditioners and heat pumps.

Taubeneck To Speak At Awards Dinner

COLUMBUS, Ohio — George F. Taubeneck, publisher of AIR CONDITIONING, HEATING & REFRIGERATION NEWS, will be the principal speaker at the annual awards dinner of the Columbus Technical Society, an organization of technical societies in the Columbus area.

The event will be held Feb. 23 at the Nationwide Inn here. At the awards dinner, the "Technical Man of the Year" chosen from one of the societies is singled out for special honors.

Now It's Cerro Corp.

NEW YORK CITY—Cerro de Pasco Corp., a leading U. S. producer and fabricator of nonferrous metals, has changed its name to Cerro Corp.

The change, effective Jan. 1, was in line with action approved by stockholders.

Meanwhile, Back at Judge Bode's Court . . .

KENOSHA, Wis. — Kenosha County Judge Harold Bode, who got nationwide publicity last fall by twice jailing a county clerk for refusing to honor a bill for the judge's air conditioner, is back in the news again.

The judge recently issued a summons to the county board chairman directing the 29-member county board to appear in his court Feb. 24. The order directed the board to show cause why it shouldn't pay an $80 rental bill on the air conditioner that the judge had installed in his chambers last September.

The board had refused to pay the bill after the state supreme court ruled against Judge Bode in his dispute with the county clerk, Richard Lindgren. Gov. Nelson had asked the high court to enter the widely publicized case after the jailings of Lindgren.

Judge Bode argued that the air conditioner was needed in his chambers where he holds conferences with defendants. He said the unit would facilitate justice.

Lindgren maintained that there was no precedent for approving the bill for the air conditioner. State Supreme Court Chief Justice John Martin ruled that the judge had acted "in excess of jurisdiction" in jailing Lindgren.

Grant Heads ACRH&PA

MIAMI, Fla.—L. L. Grant of the Hill York Corp. has been elected president of the Air Conditioning, Refrigeration, Heating & Piping Association, according to an announcement.

Typhoon Appoints Sydney Anderson

LOS ANGELES — Sydney Anderson has been appointed vice president in charge of west coast operations for Typhoon Air Conditioning Div., Hupp Corp., according to Don V. Petrone, president.

S. Anderson

Anderson will supervise operations for Typhoon in California, Arizona, and Nevada, operating from the firm's factory branch in Los Angeles.

The branch is staffed by nine field engineers and service personnel.

Before joining Typhoon, Anderson was Los Angeles branch manager for Airtemp Div., Chrysler Corp.

Merger with NFC Approved by OHI Membership

NEW YORK CITY—Oil Heat Institute of America, Inc., announced that it had received more than enough favorable proxy votes from its membership to assure ratification of the proposed merger of OHI and the National Fueloil Council.

The board of directors of OHI had voted on Jan. 26 to approve the merger. Immediately following this action, notice was issued of a special membership meeting to be held Feb. 15. By Feb. 3, favorable proxies had been received from more than the required two-thirds of the 157 voting members. Under OHI procedures, each Distribution Div. chapter and each manufacturer member has one vote.

OHI "has therefore completed all the necessary formal and legal action required to insure its participation in the merger which will form a single industry organization to further the interests of oil heating," the institute said.

In a separate announcement on plans for its 39th annual convention, the OHI said it's quite possible the meeting will take place under the name of the new organization which will result from the merger.

The convention will take place at the Statler Hilton hotel in Washington, D. C., from April 23 to 27. Accent will be on increasing the effieciency of dealer, jobber, and distributor operations.

Among events will be a Technical Div. symposium on Tuesday, April 25. This will spotlight oil burner service. The popular dealer management clinics will be held on Wednesday and Thursday, April 26 and 27, at 9:15 a.m.

OHI Protests Ad on Need for Additive In Home Heating Oil

NEW YORK CITY—The Oil Heat Institute of America is urging industry organizations to protest to General Mills for advertising "prejudicial to our industry."

The OHI said a General Mills advertisement in the February issue of *Fortune* "is a pitch for an additive marketed by the company." The institute quoted the following from the ad:

"Petroleum fuels of themselves lack several qualities essential to trouble-free operation in home furnaces. Fuel oils from cracked petroleum stocks tend to form sediments when they stand in storage. This plugs fuel lines and burner heads and generally 'gums up the works,' sometimes requiring repair work at the height of the heating season."

Such a statement appearing in a prominent consumer magazine, the OHI declared, "is, in our opinion, harmful to the oil heat industry. It also fails to reflect the striking advances in refining methods, which have eliminated the conditions described."

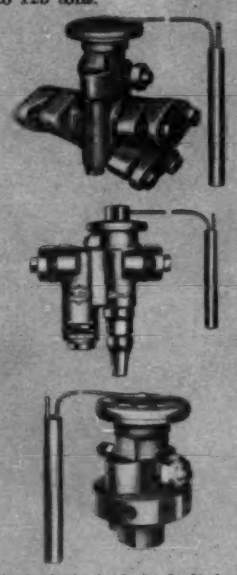
ALCO

the most complete line of Quality Controls for

AMMONIA REFRIGERATION SYSTEMS

THERMO EXPANSION VALVES

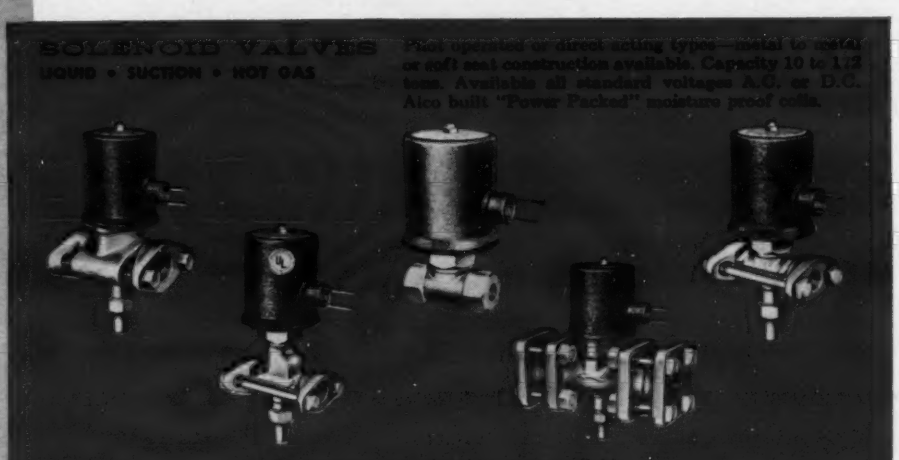
External superheat adjustment—range 2° to 20° F. and 18° to 40° F. Capacity 1 ton to 125 tons.



SOLENOID VALVES

LIQUID • SUCTION • HOT GAS

Pilot operated or direct acting types—metal to metal or soft seat construction available. Capacity 10 to 1/3 tons. Available all standard voltages A.C. or D.C. Alco built "Power Packed" moisture proof coils.

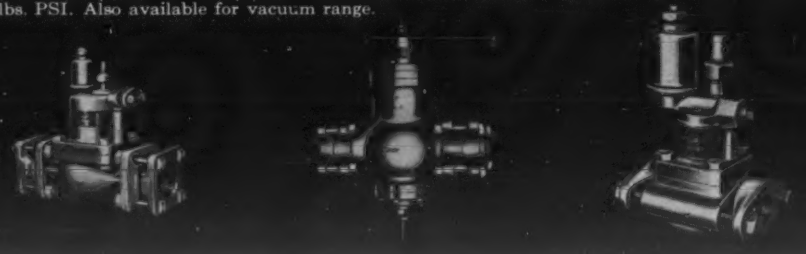


CONSTANT PRESSURE VALVES

All steel construction. Capacity 0.85 to 60.50 tons. Externally adjustable. Discharge tube prevents frosting and retards erosion of pin and seat.

EVAPORATOR PRESSURE REGULATORS

for constant evaporator pressure or temperature. Operating range 2 lbs. to 70 lbs. PSI. Also available for vacuum range.



REFRIGERANT STRAINERS

Semi-steel and Cast Iron. Straight line connections. Maximum screen areas. Line connections ½" to 2" pipe thread and flanged.

TEMPERATURE PILOT

for control of evaporator temperature. Adjustable range 0° F. to 40° F.

FLOAT SWITCHES AND HIGH PRESSURE FLOAT VALVES

Types for all applications. Float Switches—115V. or 230V. A.C. or D.C. 400 lbs. M.O.P. Float Valves—2 to 20 tons. 300 lbs. M.O.P.

Call your ALCO Wholesaler, write for specifications bulletins.

ALCO VALVE CO. 853 Kingsland Ave. • St. Louis 30, Mo.

BUY SECURITY • BUY QUALITY • BUY ALCO

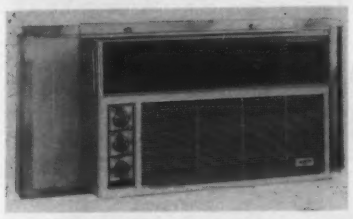
The one complete line of refrigerant controls: Thermostatic Expansion Valves • Refrigerant Distributors • Solenoid Valves Refrigerant Filter-Driers • Suction Line Regulators • Flooded Evaporator Controls and Reversing Valves

8400

Reflection of perfection!

The shine of these shoes reflects the personality of the Lau quality control specialist who's wearing them. This man is a perfectionist and it shows... it shows in every Lau Blower or blower component passed for shipment. That's one very important reason why Lau products outlast all others. Their ruggedness and dependability provide Lau customers with years of trouble-free service under all operating conditions. If you are looking for air handling perfection at a competitive price why not write or call Lau today.

The Lau Blower Company • Dayton, Ohio



BUILT-IN mounting accessories on the new RCA Whirlpool Metropolitan air conditioner are said to permit installation in a matter of minutes without need of tools or professional help. Heavy plastic roll-out mounts allow instant adjustment of mount size, yet provide a permanent, secure installation that's "exceptionally weatherproof."

Whirlpool--

(Continued from Page 1, Col. 2)

beach white and Hawaiian tan, accents the cabinet finish of tropical beige. All electrical components can be checked from the front for ease of servicing."

Whirlpool's new Super model with a capacity of 22,000 Btu "actually produces enough cooling for an average size home," the company said. "The unit can be installed over transoms, through basement windows, or through-the-wall. It is compact enough to fit in most regular windows with an installation kit available at a slight additional cost.

"A weather-sealed cabinet eliminates the need for removing or covering the cooler in winter. Dust and other airborne particles are trapped by a new washable germicidal filter made of Du Pont 'Thiuram.'

"Standard equipment on the Super are a dial-type thermostat, two-speed fan, an exhaust air control or pump-out feature, and a circularized air control which enables the flow of air to be set for any direction. Quiet operation is assured by use of a centrifugal-type fan and a foam plastic lining around the evaporator discharge area."

The new Casement unit, it was stated, "can fit virtually every style and size casement or standard windows, and can be installed through an outside wall. It has a capacity of 8,200 Btu. Five pushbuttons operate the two-speed fan and separate controls atop the unit regulate the thermostat and fresh air ventilation. A front mounted knob regulates the air flow.

"Because the moisture in air is condensed as it passes through the cooling coils, the new casement unit can remove more than 2½ pints of moisture per hour from room air."

Five deluxe model air conditioners, consisting of three through-the-wall and two reverse-cycle models, feature a number of operational improvements and simple installation, according to Whirlpool.

"Through-the-wall units are engineered to meet building requirements for home apartment, hotel, motel, and commercial facilities," it was pointed out. "The compressor is completely welded and hermetically sealed with built-in thermal overload protector as are all other models in the new line. Two fan speeds permit adjustable cooling action."

Controls on new through-wall models include a selector switch, thermostat, exhaust, and air direction knob. Two models have a capacity of 8,500 Btu; the other is rated at 11,000 Btu.

"A false front supplied with the cooler for pre-installation use can be painted to match the decor of any room. An attractively designed exterior grille is provided to cover the cut-out before the air conditioner is installed.

"The Deluxe reverse cycle room cooler," the company continued, "supplies desired cool air in the summer and, by the flick of a knob, heat in cooler weather. Units in this series are equipped with electric heating elements as well as reverse cycle heat pumps. Electric heat comes on automatically when outside temperature drops to about freezing, and the reverse cycle operation stops. The two are never on at the same time.

NEW DUAL air direction in the 1961 RCA Whirlpool room air conditioner Custom series supplies cool air into two areas at the same time. In addition to cooling and dehumidifying, the new unit filters out pounds of dust and other foreign particles from the air, provides a cleaner home, according to the manufacturer.

"The spring - and - rubber - mounted compressor, special silencing chamber, and placement of cooling coils combine to make operation of the unit exceptionally quiet. Four knob controls select temperature, exhaust, air direction, and cooling or heating as desired. Reverse cycle units have 11,000 or 14,500 Btu capacities.

"Improvements incorporated in the new seven-model Custom series include two-way air direction control that spreads cool air in two areas of the room at the same time, and a new high-capacity - air - filtration system made of washable Du Pont Thiuram foam."

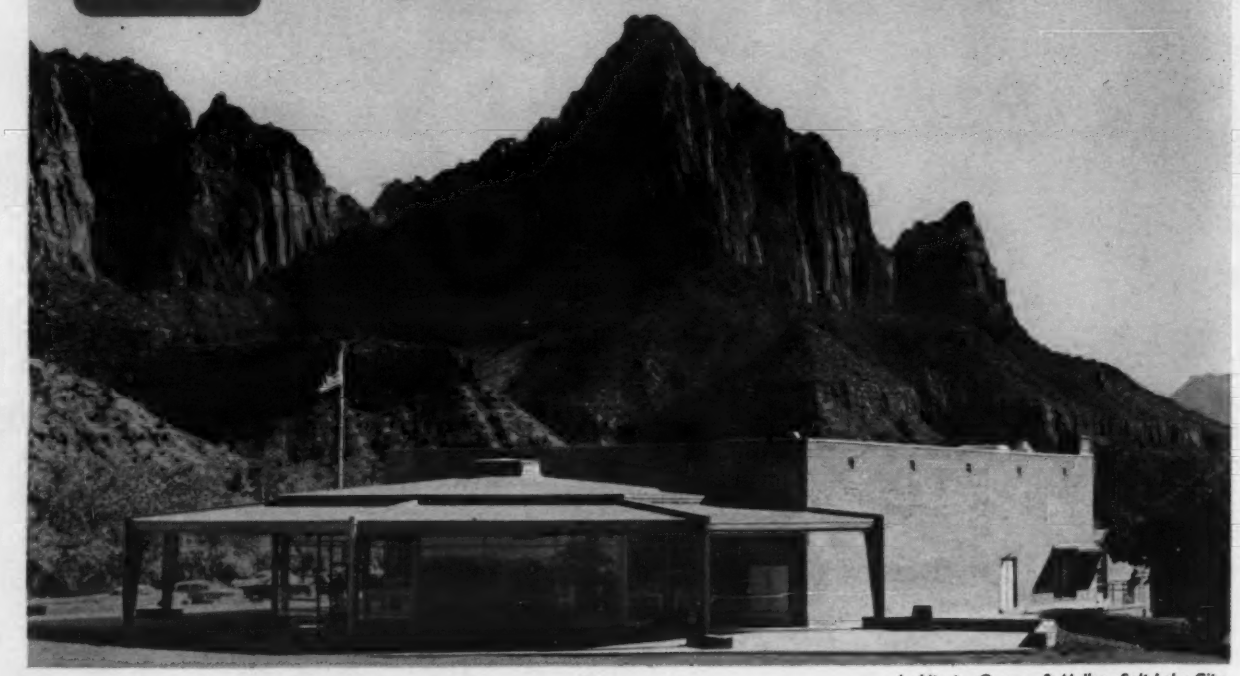
The "operation" control provides variable volume of air movement, also permits use of fan only for ventilation without cooling, if desired. Capacities vary from 7,000 to 16,500 Btu.

"The entire line also features a rugged pull-out chassis; pre-installed installation kit for quick mounting; zinc coated cabinet finished with a triple coat of enamel; fully louvered rear panel and weather-seal," the company said.

Model	Btu Capacity	Volts—Amps
CUSTOM		
CP-100C-20	7,000	115 — 7.5
C-100C-20	8,800	115 — 12.0
C-100C-30	10,000	230
C-100C-50	10,000	208
C-130C-30	13,000	230*
C-200C-30	14,500	230
C-230C-30	16,500	230*
REMOTE CONTROL		
CRH-100C-20	10,000	115 — 12.0
CRH-100C-30	11,000	230
DELUXE		
DH-100C-30	11,000	230†
DH-200C-30	14,500	230†
DTW-100C-30	8,500	230‡
DTW-100C-50	8,500	208‡
DTW-120C-30	11,000	230‡
METROPOLITAN		
MP-100D-20	6,600	115 — 7.5
M-100D-20	8,500	115 — 12.0
M-100D-30	9,000	230
SUPER		
AJB-250S-30	22,000	230§
CASEMENT		
AJB-100C-20	8,200	115 — 12.0

*Hi Capacity.
†Heat Pump.
‡Thru Wall.
§Super Capacity.

Acme ...the **practical** approach to air conditioning



Architects: Cannon & Mullen, Salt Lake City

Air Conditioning from A to Z

From Acme to Zion National Park . . . complete Acme comfort conditioning for the striking new Visitors' Center. Yes, the entire system . . . including two *Flow Therm* Packaged Chillers, two Multi-Zone Air Handling Units, one *Econ-O-Mizer* Cooling Tower . . . bears the name Acme, one of the oldest, most respected names in air conditioning equipment.

And with this Acme system, perfect year around climate control is maintained in every area of the Visitors' Center. In variable weather the system shifts instantly from heating to cooling as conditions require. Sun and wind loads on different sections of the building are automatically compensated for . . . heating one section while cooling another, if necessary.

Certainly, the ideal temperatures and humidities of the dust-free Acme-conditioned air in the Center are an appreciated boon to Park personnel and visitors alike. Acme equipment is highly regarded, what's more, by the architects, engineers and contractors who specify and install air conditioning systems. For example, Mr. Roy Cowley of Wright, Cowley & Evans, consulting engineers on the Center job, has this to say "We have been very satisfied with the performance Acme equipment has given us, both on this job and on others. It's as good as anything on the market and we have nothing but confidence in Acme." You'll have "nothing but confidence in Acme", too, when you hear the complete story – get it from your Acme representative.

Acme INDUSTRIES, INC.
JACKSON, MICHIGAN • GREENVILLE, ALABAMA
MANUFACTURERS OF QUALITY AIR CONDITIONING AND REFRIGERATION EQUIPMENT SINCE 1919

Fedders Room Unit Sales Promotion, Advertising Drive To Cost $4 Million

MASPETH, N. Y.—Details of a room air conditioner advertising and sales promotion campaign which will cost an estimated $4 million were announced recently by Fedders Corp.

"The 1961 campaign, which will begin in April and continue through August, will stress the ease of installation made possible by Fedders exclusive built-in 77-second system and the Fedders 'Climatimer' automatic clock-timer unit," it was pointed out.

The major emphasis of the campaign will be on network television and radio sponsorship, according to U. V. Muscio, Fedders executive vice president.

A barrage of one-minute commercials on prime time shows on the NBC and CBS television networks will begin on April 16. Fedders commercials will be telecast coast-to-coast on the Jack Parr Show, Michael Shayne, the Shirley Temple Show, and The Americans on NBC, and on I Love Lucy, CBS Reports, and Face the Nation on CBS.

In addition to the national network shows, with a minimum total of 34 announcements, a large number of local TV commercials will be placed through Fedders distributors. As an example, 168 commercials will be seen on local New York television shows, Muscio pointed out.

Radio coverage will consist of daily commercials for 10 weeks on the Mutual Broadcasting System national network. One-minute commercials, with a provision for an additional 30-second local dealer tie-in will be presented on five-minute news programs.

In addition to TV and radio, the campaign will utilize the printed media to a greater extent than ever before. Full-page, four-color ads will appear in April and May issues of *Life* magazine and the *Saturday Evening Post*.

On the local level, Muscio said, cooperative newspaper advertising will be increased. In addition, a large-scale trade press campaign has been slated.

Outdoor billboards form another medium to be utilized to the fullest extent, Muscio said. From April through June, he said, several different 24-sheet outdoor posters will be placed on some 4,000 double billboards on a nationwide basis.

The final phase of the advertising program is a double-barreled direct mail campaign, slated for April and June. Two sets of dealer-imprinted mailers will be sent by Fedders to 1½ million prospective customers within dealer-designated areas.

The Fedders executive noted that the $4 million budget is devoted to room air conditioners exclusively. The advertising campaign for the company's central air conditioning systems was presented recently at a distributors convention in New York City. Hicks & Greist, Inc., New York City, is the Fedders advertising agency.

In the area of sales promotion aids, Muscio said the major feature of this program is Fedders sales incentive vacation plan, which this year will take qualifying retailers on all-expense paid vacation trips to Rio de Janeiro and St. Croix in the Virgin Islands.

In addition to the free vacations, Fedders will make available to dealers a wide range of window and in-store displays, signs, banners, and literature. Among these items are a 5-ft, double-faced, illuminated outdoor sign, a full dimension motion window display demonstrating the C-77 installation system, the Selling Center display rack, and a double-faced overhead banner.

Emerson Radio Offers Combination Dehumidifier and Air Purifier

JERSEY CITY, N. J.—A combination room dehumidifier and air purifier has been introduced by Emerson Radio & Phonograph Corp.'s Quiet Kool Div.

This model DA-3 "contains an air purification system consisting of two germicidal lamps in addition to two giant, activated charcoal filter cells to remove dust, dirt, and other airborne particles as well as soot and odors," the company said. "It can operate in conjunction with, or separately from, the dehumidifier."

This model also incorporates such features as automatic humidistat, overflow guard, which turns the unit off automatically to prevent overflow, and overflow signal light which lights up when the bucket is full.

QUIET KOOL combination room dehumidifier and air purifier Model DA-3.

It is encased in a decorative zinc-coated steel cabinet and finished in oven baked enamel with a gold grille both in front and rear. It is also equipped with a ⅕-hp compressor, a 4-gal plastic bucket, 18 in. of hose, and is mounted on ball bearing casters. Suggested list price for model DA-3 is $118.

Two additional Quiet Kool dehumidifier models also were announced: Model DA-2 which contains all the features of model DA-3 with the exception of the air purifier and has a suggested list price of $98, and model DA-1, a special promotional leader with a suggested list price of $78.

NEWS readers are invited to write to the editor giving their opinions on any subject of interest to the industry.

IN TUBING—
Nothing
Beats
Copper!

IN COPPER—
Nothing
Beats
READING!

READING COPPER · BRASS TUBE
And RED BRASS PIPE

READING

* Wholly Owned Subsidiaries
READING METALS REFINING CORP.
Ontelaunee Twp. Berks Co. Pa.
READI-FIN MFG. CO., Inc., Reading, Pa.
MACKENZIE WALTON CORP., Pawtucket, R. I.

Completely Integrated Quality Control from Our Own Refinery to Our Own Distribution Depots

For SMALL, SEAMLESS PRECISION COPPER TUBE

Specify MACKENZIE WALTON

Product of MACKENZIE WALTON CORP.*

BOURDON
THIN WALL
CAPILLARY
BRAIDED
SHAPE

Ideal for
- Instrumentation
- Bourdon Gauge
- Air Conditioning
- Surgical Instruments
- Refrigeration
- Thermostatics
- Automotive
- Band Instruments

Featuring
- Copper and Copper Base Alloys
- Famous for Accurate and Fine Finish

Send for Detailed MACKENZIE WALTON CATALOG of Small Tubing

For COPPER WATER TUBE Specify READING "LEKTRONEAL"®
For COPPER REFRIGERATION TUBE Specify READING "LEKTROSEAL"®
For COMMERCIAL COPPER TUBE (in Varied Shapes) RED BRASS & COPPER PIPE, THREADLESS COPPER PIPE, COPPER DRAINAGE TUBE Specify READING
For FINNED COPPER TUBE Specify READI-FIN®
Product of READI-FIN MFG. CO., INC.*

Tube Corporation

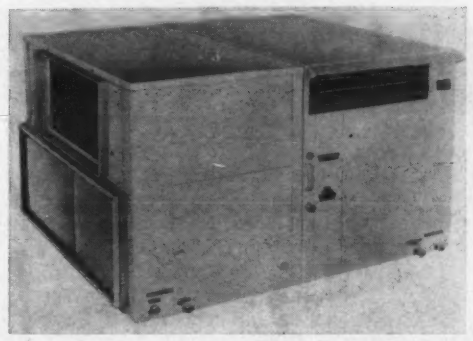
EMPIRE STATE BUILDING, NEW YORK 1, N. Y. • PLANT: READING, PA.

Distribution Depots:

READING, PA. • WOODSIDE, L. I., N. Y., 57-17 Northern Blvd.
PHILADELPHIA, PA., 921 No. Penn St.
ATLANTA, GA., 690 Murphy Ave. S.W., Unit 5, Bldg. B
NEW ORLEANS, LA., 1102 St. Thomas St. • CHICAGO, ILL., 305 W. 31st St.
CLEVELAND, OHIO, 1562 E. 55th St. • DENVER, COLO., 2635 Walnut St.
DALLAS, TEXAS, 9000 Sovereign Row • HOUSTON, TEXAS, 1121 Rothwell St.
LOS ANGELES, CALIF., 120 No. Santa Fe Ave. • OAKLAND, CALIF., 410 Hegenberger Rd.

Sold Through Wholesalers Only

Thermador Introduces 3, 5-Ton Heat Pumps For Residential, Commercial Installations



VERSATILITY is said to be one of the features of this Thermacooler heat pump. Available in 3 or 5-ton capacities, the unit can be installed either as a self-contained package or as a remote system.

LOS ANGELES — An "advanced" heat pump for residential and commercial installations has been developed by the Product Development Laboratory of Norris-Thermador Corp. here, according to William E. Cranston, president of Norris-Thermador.

The new heat pump, called the "Thermacooler," is available in 3 and 5-ton capacities and is being marketed by the Thermador Div. of the corporation. Thermador is a national manufacturer of residential electrical heating equipment as well as electric cooking equipment.

Versatility of the Thermacooler heat pump was emphasized.

"These units," it was pointed out, "can be installed either as a self-contained package or as a remote system.

"The indoor air handling section, which is supplied complete with filter rack and filter, can discharge the supply air either forward, to the right and left, or upward. This is achieved by interchanging the discharge collar with filler panels.

"The indoor section can also be used as a free-standing air handler by the addition of an adjustable discharge grille. In addition to being able to install this unit as a horizontal package or remote system, it can also be assembled as a vertical unit.

"For extra quiet operation, an insulated discharge plenum is part of the indoor unit. Air flow may be adjusted to meet the varying conditions found in different installations.

"The outdoor section is supplied with an acoustically insulated discharge plenum. This plenum and the squirrel cage outdoor blower provide maximum air flow at minimum noise. Outdoor air enters the unit over an extra large outdoor coil.

"The Thermacooler is designed with the accent on simplicity. Capillary tubes are used in an ingenious circuit to give efficient service, properly modulated for maximum heating and cooling."

Simplicity of the electric control panel also was stressed.

"The only moving parts are one contactor and one fan relay, yet, the Thermacooler is completely automatic," the company stated. "The unit will automatically change from cooling to heating or vice versa, defrost when necessary, and then return to heating if required. Auxiliary heat, if used, may be initiated during the defrost cycle or excessively low temperatures.

"All parts are easily accessible for field service. Voltages, currents, and pressures can be checked on the panel under normal operating conditions without opening any other access doors."

The announcement continued:

"All units are shipped fully charged and have been performance tested for both cooling and heating prior to shipment from the factory. For remote systems, factory charged tubing, complete with self-sealing couplings, will be furnished. Since all units are fully wired at the factory, only connections for supply wires and thermostat control wires are required.

"For low ambient areas supplementary electric duct heaters are available in various sizes. These duct heaters are completely self-contained units.

"Once installed, the supplementary heater works automatically and will come into operation only when the heat pump is unable to satisfy the heating demand. These duct heaters are controlled solely by conditions inside the house in order to reduce their use to a minimum."

The company said the thermacooler "will be sold only through authorized, qualified air conditioning contractors. Consumer advertising materials will stress the importance of the contractor for good heat pump performance."

all-aluminum mx unit coolers

From 900 to 54,000 BTU

- RUSTPROOF, LIGHTWEIGHT ALUMINUM CASE
- COIL CONSTRUCTION completely non-ferrous
- MINIMUM PRESSURE DROP CIRCUITING, conservative ratings
- AMPLE ROOM FOR TX VALVE
- EASY TO INSTALL, keyhole slotted hangers on unit
- FACTORY ASSEMBLED unit hangers, drain fittings
- 2-WAY MOUNTING standard factory equipment on MX-9 through 17
- QUIET, EFFICIENT fan and motor combinations
- LIFE LUBRICATED standard motors; easily replaced in field

Write for Bulletin 118-58

Engineers and Manufacturers of Refrigeration and Environmental Equipment

Tenney ENGINEERING, INC.

1090 SPRINGFIELD ROAD, UNION, NEW JERSEY • PLANTS: UNION, N. J. AND WILMINGTON, N. C.

Cuisine Exquise Dans
Une Atmosphère Élegante

RESTAURANT
VOISIN

575 Park Avenue at 63rd St.
NEW YORK

Lunch and Dinner Reservations
Michel: TEmpleton 8-6490

Delco Sees 15% Rise In Sales Of Home Cooling

LOS ANGELES — Commitments from Delco Home Conditioning dealers indicate a 15% increase in orders over this same period in 1960.

Paul H. Rutherford, general manager, Delco Appliance Div., Rochester, N. Y., made this announcement at a press conference held in connection with the Los Angeles visit of the GM Motorama.

"There has also been a 5% increase in key dealer franchises for the Delco Home Conditioning line," he added. "Project builders throughout the nation are showing a genuine interest in the GM Delco 365 line," he reported.

Delco Appliance Div. is introducing its new line of residential home conditioning equipment in the major markets of the country.

The Delco Appliance sales organization is being expanded rapidly on a nation-wide basis, it was pointed out. Regional warehouses have been established in major markets. West Coast warehouses will be located in Portland, San Francisco, and Los Angeles.

Rutherford pointed out in his press conference that within ten years the average family will insist on purchasing its new home completely comfort conditioned.

"By comfort conditioned," he added, "I mean homes that include not only heating and cooling but also humidity control and electrostatic air filtration. By 1970 a home without central comfort conditioning will be considered obsolete."

Rutherford said that figures show sales of central residential air conditioning units climbed to over 200,000 in 1960 as compared to sales of only 77,000 units in 1954. He predicts that by 1962 the home conditioning industry will pass the 300,000 unit sales mark.

"The growth is due to several factors," Rutherford stated. "Equipment is simplified, is more reliable, does not require as elaborate an installation as it used to, and most important of all, the price has been reduced to the point where central system air conditioning is no longer to be considered as a rich man's luxury.

"Progressive builders are constantly on the lookout for new sales features which they can merchandise in their new homes. Central system home conditioning has proven itself to be such a feature."

Apartment Building Will Be Cooled

WASHINGTON, D. C.—Plans for a 600-unit, air conditioned, garden-type apartment development were announced by Ralph F. Triska of Maxbee Investments, Inc. The project is on Defense Highway, opposite Carrollton, in Prince Georges county. Rentals will range from $100 a month, it was indicated by the developer.

Officers Elected

Shreveport Residential Air Conditioning Group To Form Indoor Comfort Bureau

SHREVEPORT, La.—Officers for the coming year were elected recently at the annual meeting of the Shreveport Association of Residential air Conditioning & Heating Contractors (SARAH).

They are president, Durward W. Aiken, Jr., vice president of Dixieaire Air Conditioning Co.; vice president, A. B. Black, Jr., Blackie's Tin Shop; secretary-treasurer, Herman L. Meyer, Radalec, Inc.

In accepting the presidency, Aiken stated that the group was forming an Indoor Comfort Bureau to install guaranteed systems of central heating and cooling in the residences of the area. He pledged the association's cooperation and support to work with the Federal Housing Administration and other regulatory authorities to improve installations of equipment and ducts and grilles.

It was announced at the meeting that Herbert T. Gilkey, technical director of the National Warm Air Heating & Air Conditioning Association, would be in Shreveport early in February to spot check a number of local installations and help develop special standards applicable to Silver Shield systems, and that Jim Nolan, assistant director of public relations for NWAHACA would be here to conduct business training course for the contractors.

Silver Shield Now In Tulsa

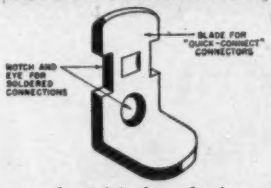
OFFICERS of the newly-formed Tulsa, Okla. Indoor Comfort Bureau are pictured here. From left to right: President Richard Shoemaker, Forrest Shoemaker Air Conditioning Co.; Vice President Jack Harper, Harper's Sheet Metal Co.; Secretary Robert E. Saizow, Climate Control Co.; and, Treasurer James L. Sharp, Sharp Refrigeration and Air Conditioning Co. The group was photographed at the official licensing of the Silver Shield group here during the dinner meeting attended by some 500 individuals in the Crystal Ballroom of the Mayo hotel.

A FEW FACTS ABOUT MOTOR CAPACITOR TERMINALS

Contrary to a common belief shared by many users of specialty capacitors for a-c applications, all capacitors are *not* alike. Some brands have not changed in design or construction for years. Others make changes to keep up with competitive products. Sprague Electric, however, constantly improves its designs for maximum dependability and minimum cost.

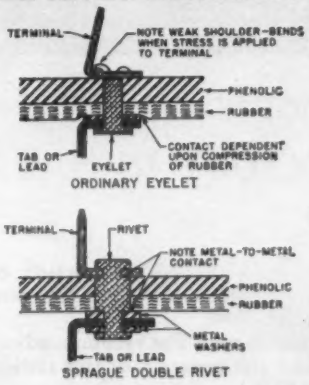
Although the terminal assembly is a relatively small part of the entire unit, it has often been the cause of capacitor failure. Here, Sprague has developed new, improved terminals which eliminate failures of this nature, reduce equipment manufacturers' assembly time, and make future servicing easier. Here are some of those recent improvements:

1. "UNIVERSAL" TERMINAL LUG



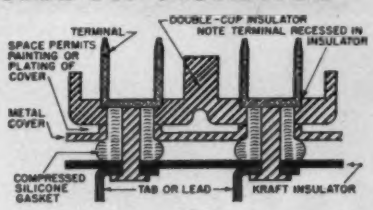
Single-blade or dual-blade, designed for use with "quick-connect" connectors. Also has notches and eyes for soldered connections—an important feature when "quick-connect" connectors are inadvertently destroyed by servicemen. Copied and imitated by others, universal terminal was originally designed by Sprague, is now patented by Sprague.

2. DOUBLE RIVET CONNECTION



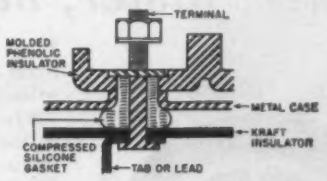
Unique new rivet design for positive metal-to-metal contact between rivet and terminal as well as between rivet and tab. Unlike ordinary eyelet where weak riveted shoulder will bend or break when terminal is pulled, as often happens when removing snug-fitting "quick-connect" connectors, Sprague rivet prevents arcing caused by loosened contact points. Patent pending on this unique design.

3. DOUBLE-CUP INSULATOR



New one-piece molded phenolic cups for increased rigidity and prevention of terminal rotation. Unlike ordinary single-cup construction, which permits accidental twisting of terminals, causing leads inside capacitor to "short" or break off, terminals in Sprague's new double-cup insulator cannot turn because of square recess in molding which accommodates base of terminal. Bottom of insulator has contoured shape which permits plating or painting of entire capacitor cover, in full compliance with Underwriters' Laboratories, Inc. requirements for outdoor applications. No hidden, unprotected areas, as with ordinary single-cup. Patent pending on this assembly.

4. STURDY STUD TERMINAL



Pull-proof, welded terminal assembly designed to take severe physical abuse. The first reliable stud terminal available on a-c specialty capacitors. Although superior in performance, new Sprague design actually costs less than any other stud-type terminal. Patent pending on this assembly.

For Engineering Bulletins or application assistance on Sprague's complete line of a-c specialty capacitors, write to Technical Literature Section, Sprague Electric Company, 63 Marshall Street, North Adams, Massachusetts.

WORLD'S LARGEST MANUFACTURER OF CAPACITORS

SPRAGUE®
THE MARK OF RELIABILITY

Inside Dope

By GEORGE F. TAUBENECK

(Continued from Page 1)

from our old friends when the conversation drifts into the area of computers and computer technology," declare Minneapolis-Honeywell execs.

"It occurred to us that if we wanted to maintain our line of communications with our customers, we'd better see what we could do about helping you to master the weird and wondrous language of the computer engineer.

"We feel this is necessary because 'computerese' is more than just a few new terms added to our instrument lingo. It's a whole new language conceived by the computer engineers over the past several years."

What Is a Computer, Anyway?

A computer, it seems, is "any device capable of performing calculations, i.e., carrying out transformations of information." (Editor's note: You mean like an abacus?)

M-H personnel then explain how a process control computer functions, but you'll need their dictionary to understand it.

"Mnemonic code," for instance, is a list of computer instructions written in a form which can be remembered easily by the persons who program them.

A "binary coded decimal," is a system of representing decimal numbers, while a binary scale is a numbering system whose simplicity makes it ideal for computers (which, let's face it, are highly illiterate devices).

"Radix" is simply the numbering system's base.

As for a "bit," it isn't a small portion or part of a bridle that's inserted in a horse's mouth. It's slang for binary digit, of which there are two—0 and 1—used in converting a decimal number into a binary number.

For example, the decimal numbering system uses 10 marks (0 through 9), thus having a radix (or base) of 10.

The binary system, using two marks, has a radix of 2. The decimal number, 296, becomes 10010100 (made up of 9 bits) in the binary numbering system.

This makes sense after you read the definition for a binary system!

Yep, We're Confused, Too

If you think that an address is a street number, guess again. In "computerese," it's a label which identifies (for the computer) a specific location in its memory where certain information is stored.

A drum isn't something to beat. Rather, it's a rotating cylinder used to store information in machine language.

Nor is a gate an entrance. It's a circuit with one output (information sent out by the computer and designed so that the output is energized only when certain input conditions are met).

Patch? Not mending material natch, but a section of coding (language which can be understood and handled by the computer). "Patches" are inserted in a set of instructions to correct a mistake or alter the machine's routine.

Don't err in thinking there's only one kind of arithmetic, either, please.

In the computer world, there's "double precision arithmetic," "multiple precision arithmetic," "floating point arithmetic," "internal arithmetic" and "fixed arithmetic."

Tennis, anyone?

Thoughts for the Week

Some books fill a place in your library—others fill a place in your heart.—ARNOLD H. GLASOW.

Having a good reputation is a fine thing as long as you don't alienate people by trying to deserve it.—FRANKLIN P. JONES.

Nothing tends to make people feel better as much as a confession of sins—by other people.

Stories of the Week

Father and mother took the kids on a motor vacation trip to the West.

Day after day, in the back seat, the youngsters quarrelled, wrestled, and brawled. It was a continuous, nerve-straining, hubbub.

Eventually they arrived at the entrance to Yellowstone National Park, where a conspicuous sign greeted them:

DEPOSIT YOUR LITTER HERE:

"It's a temptation, isn't it?" hubby hinted to the mother of the brood.

Seatmates on a train were an urban salesman and a demure young lady.

"Here comes a tunnel," informed the well-travelled salesman. "Will you be afraid?"

"Not if you take that cigar out of your mouth," she surprised.

Replica of the spaceship which our Astronauts will "sail" was sent aloft with sheep aboard.

It orbited beautifully, and was recovered in the Pacific Ocean. An historical moment, this. Because, you see, it was:

"The herd shot around the world."

When the *Titanic* started to sink, Mrs. John Jacob Astor complained:

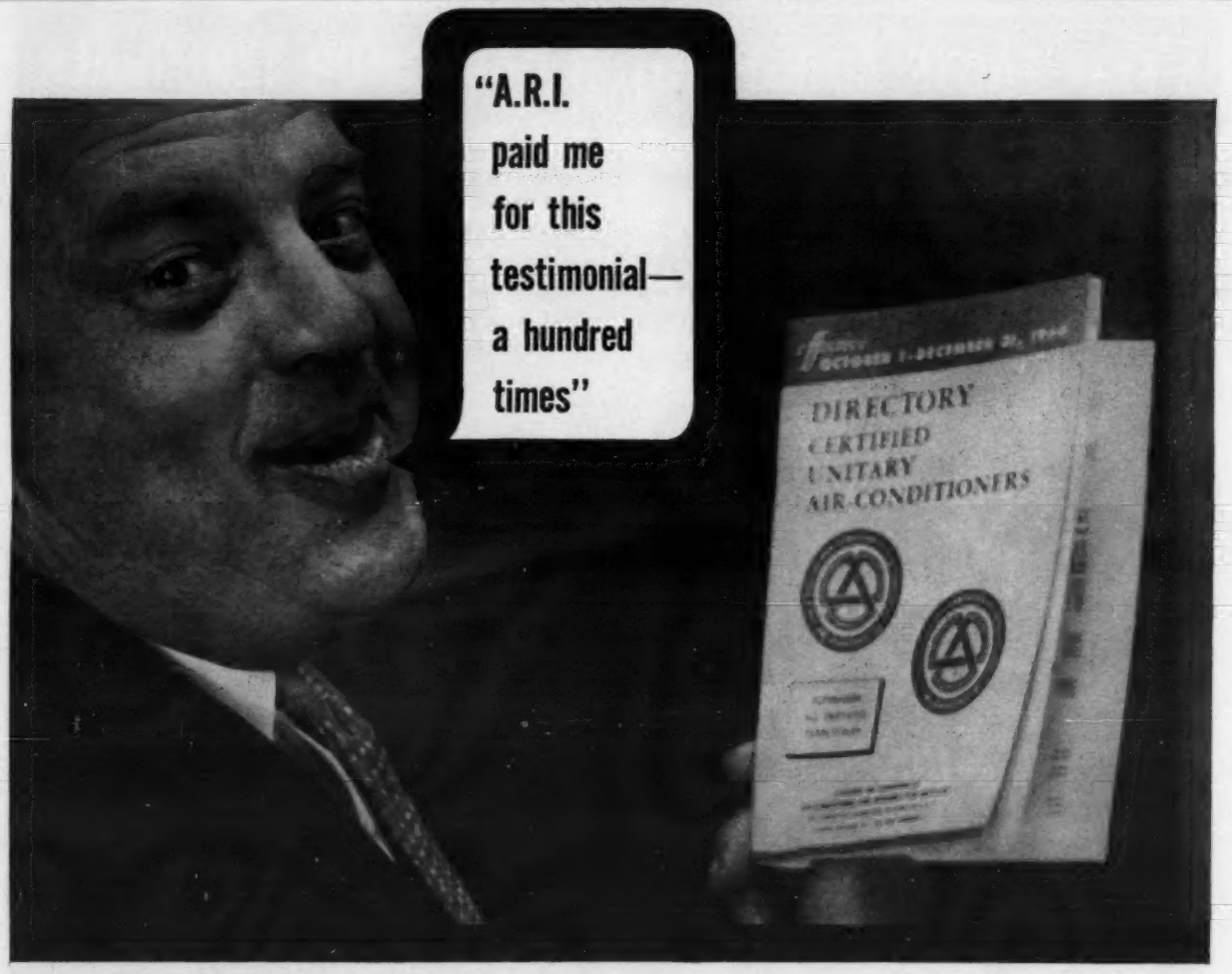
"I ordered ice, but this is ridiculous."

Quotes of the Week

If before he is 45 a man has never risen above his job and gone all-out for some task or cause totally unrelated to his business, he will be a hopeless case at 65, a perpetual problem to his family and his friends.—CLARENCE B. RANDALL.

Liking people is one of the important ingredients for getting the most out of life. If you like people, you have a zest, an enthusiasm for working and for living. You give of yourself to others and, in return, you find yourself getting a great deal from them. Once it becomes a part of you it will pay dividends not only in your work but in sheer enjoyment of living. Try it and see for yourself.—SAMUEL GOLDWYN.

Anyone who angers you conquers you.—*Seneca.*



Mr. Louis E. Bake, *Air-Conditioning Dealer,* says:*

"Selling with the A.R.I. Directory is easier, faster, more profitable."

How profitable? Ask Louis Bake, who uses the ARI Directory regularly, finds it a big help in closing sales, and a major factor in his company's 50% sales increase in 1960.

"When I show customers that the unitary system I'm recommending is listed in the ARI Directory, and *certified* under the program of this national association, I add authority to my presentation.

"I point out how the equipment is carefully rated under the Certification Standards, that this rating is subject to checking at any time by the Institute through an independent testing laboratory in New York. Result: I back my sales talk with the authority of the Air-Conditioning & Refrigeration Institute, give my prospects more confidence in what I say.

"I thought selling with the ARI Directory couldn't be beat—until I saw the new ARI Consumer sales piece, 'How to Buy Central Air Conditioning.' This is a *must* for any dealer who wants to tell his prospects the *how* and *why* of central air conditioning. It tells the full, technical story in words John Q. Public can understand, and helps any honest dealer sell a quality system."

Free copies of both the A.R.I. Directory and "How to Buy Central Air Conditioning" are available from:

AIR-CONDITIONING & REFRIGERATION INSTITUTE

Department A-211, 1346 Connecticut Avenue, N.W., Washington 6, D. C.

THIS UNIT HAS BEEN CERTIFIED AS COMPLYING WITH ARI STANDARD 210 • AIR CONDITIONING • AIR CONDITIONING • AIR CONDITIONING

*Mr. LOUIS E. BAKE is Sales Manager of Cool-Heat Sales Company, Inc. of Washington, D. C.

NEW FROM bryant

SUPER COMPACT 2-TON AIR CONDITIONER
PRICED FOR TRACT HOMES AND APARTMENTS

This new Model 557 represents the essence of Bryant's long years of research and successful experience in central air conditioning. Along with its companion Model 563, it puts you in a prime position to bid and get these close margin jobs at a profit.

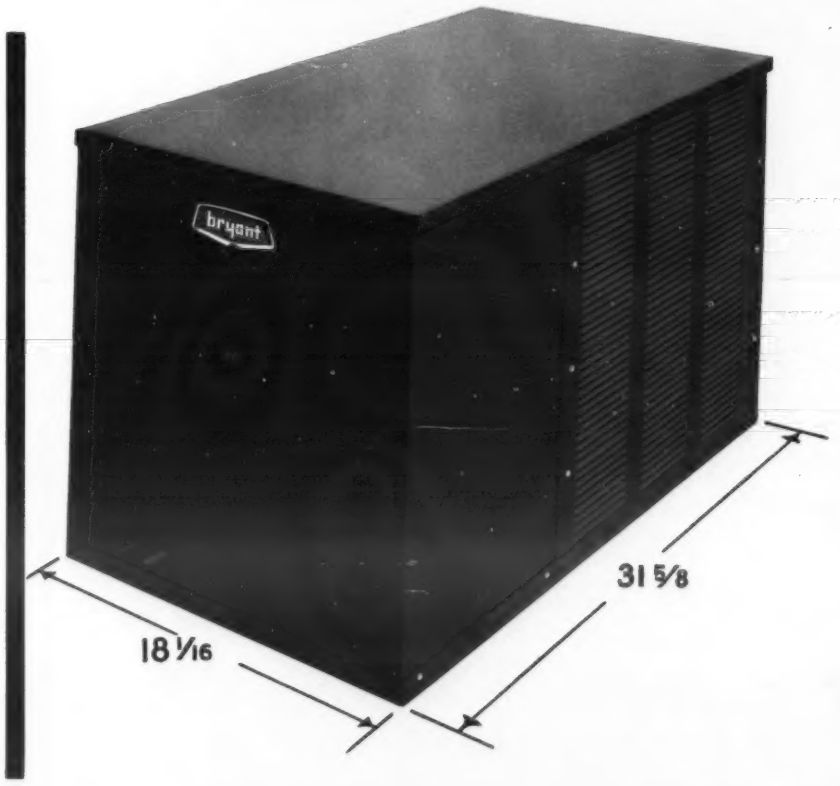
AIR CONDITIONS up to 1200 square feet of living space.

EASY TO HANDLE on the truck, on the job.

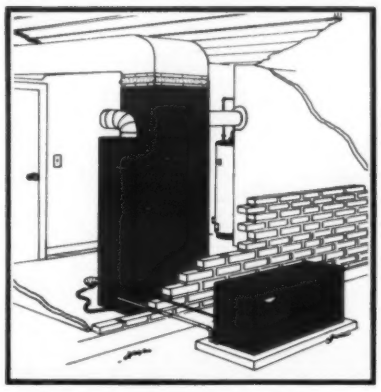
EXTREMELY SIMPLE INSTALLATION All you do is uncoil the 8 feet of permanently attached tubing, set the units in place and connect the wiring. Running, cutting, soldering of refrigeration lines, and purging is eliminated.

MODEL 557 comes with 8 feet of permanently attached tubing.

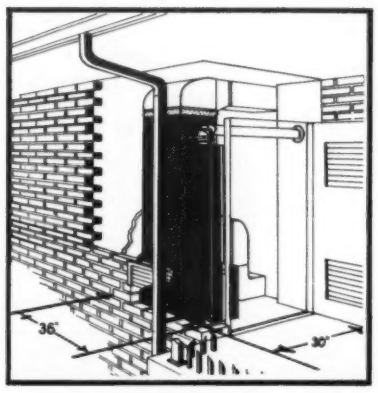
MODEL 563 is the same unit without tubing attached.



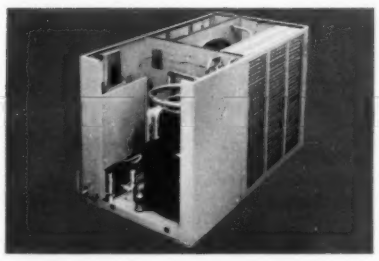
NEW SPACE-LABOR-MONEY SAVING DESIGN



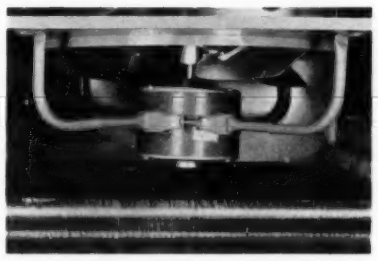
FOR HOMES AND GARDEN APARTMENTS. This view shows how unit can be *placed within 4 inches of outside wall* with no sacrifice of operating efficiency. Extended tubing permits fast, foolproof installation.



FOR APARTMENTS. This view shows condenser, furnace, cooling coil and ducting housed in an outside closet only 30" x 36". Note how condensate drains directly into downspout.



QUIET OPERATION. Compressor is housed in sound-proof compartment for quiet operation, and large condensing surfaces permit lower, quieter fan speeds while maintaining full rated cooling capacity.



EFFICIENCY INCREASED. Placing motor between the fan and the coil sets up a swirling action of the air that "scrubs" the coil surfaces increasing heat transfer efficiency. Also, the motor is better protected.

2 TO 7½-TON UNITS TO FIT YOUR NEEDS. You can make up some sixty different combinations of Bryant condensers and coils to meet almost any conceivable need. See our new catalog.

Join up with

bryant

the company on the move!!!!!

BRYANT MANUFACTURING COMPANY • Indianapolis 7, Indiana

SOLID LOCAL SUPPORT in layout, sizing and supervision of jobs by factory trained air conditioning specialists is available through your local Bryant Distributor or Factory Branch.

COMPLETE HOME COMFORT CORE The cooling coil, condensing unit and 80,000 Btu furnace are combined in a compact yet easy to service package. In stack-on installation, furnace opening is provided in condenser cover.

USE BRYANT'S Home Comfort Core Merchandising Plan (all ready to use) to get the inside track on and close those tough jobs. Your Bryant Distributor or Factory Branch has all the facts.

12 REASONS WHY DEALERS LIKE BRYANT

1. Most Complete Line. 2. Exclusive selling features. 3. Fast Delivery. 4. Most flexible financing and credit aid. 5. On-the-spot counsel. 6. Sales and technical training. 7. Business management guidance. 8. Local ad campaigns. 9. Sound sales policies. 10. National reputation. 11. Gas air conditioning. 12. Bryant's financial strength.

Trane Develops 5, Compressor for Its

CUTAWAY of small (5 and 7½ hp) hermetic compressor developed by The Trane Co., La Crosse, Wis., for use in its commercial self-contained and residential air conditioning equipment. The new unit features an anti-slugging valve and internal vibration isolators.

LA CROSSE, Wis.—A new 5 and 7½-hp hermetic compressor for use in the company's package equipment has been announced by The Trane Co. here.

The refrigeration compressor —called model D—is a short stroke, large bore machine. All connecting rods and pistons are aluminum to reduce unbalance. The 5-hp model has three cylinders; the 7½-hp unit has four cylinders.

Among the features listed for the model D by the manufacturer are:

Crankshaft and rotor statically and dynamically balanced as an assembly; crankshaft constructed of ductile iron, the main and pin journals induction hardened and valves plated—all to reduce wear; an anti-slugging valve which releases pressure immediately when liquid gets into cylinders.

Internal vibration isolators which float the basic compressor assembly within the stationary outer shell; built-in suction and discharge line mufflers inside the unit results in quieter operation; motor winding heat is reduced by all suction gas passing directly through the rotor and stator windings; an oil pressure regulator maintains constant oil pressure regardless of operating conditions; a sight glass for checking oil pump operation.

Trane anticipates, by March 1961, installation of the model D compressor in all Trane package equipment requiring 5 and 7½-hp refrigeration units. This includes Trane self-contained "Climate Changers" for commercial applications, and Climate Changer condensing units for residential air conditioning use.

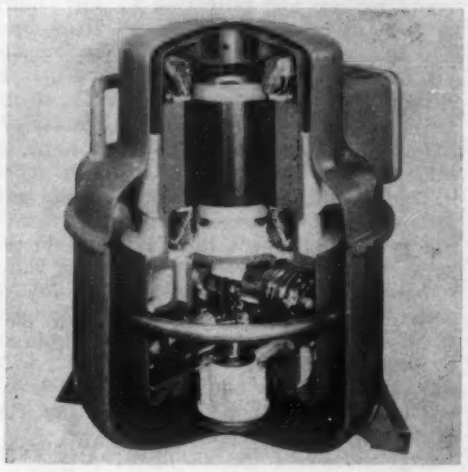
Bryant Plans Schools on Electric Cooling Service

INDIANAPOLIS — Two one-week electric air conditioning service schools have been scheduled by Bryant Mfg. Co. for dealer and distributor personnel.

Classes begin March 6 and April 17. Subjects to be covered include application, installation service, principles of operation, and design modification.

NEWS readers are invited to write to the editor giving their opinions on any subject of interest to the industry.

Trane Develops 5, 7½-Hp Hermetic Compressor for Its Package Equipment



CUTAWAY of small (5 and 7½ hp) hermetic compressor developed by The Trane Co., La Crosse, Wis., for use in its commercial self-contained and residential air conditioning equipment. The new unit features an anti-slugging valve and internal vibration isolators.

LA CROSSE, Wis.—A new 5 and 7½-hp hermetic compressor for use in the company's package equipment has been announced by The Trane Co. here.

The refrigeration compressor —called model D—is a short stroke, large bore machine. All connecting rods and pistons are aluminum to reduce unbalance. The 5-hp model has three cylinders; the 7½-hp unit has four cylinders.

Among the features listed for the model D by the manufacturer are:

Crankshaft and rotor statically and dynamically balanced as an assembly; crankshaft constructed of ductile iron, the main and pin journals induction hardened and valves plated—all to reduce wear; an anti-slugging valve which releases pressure immediately when liquid gets into cylinders.

Internal vibration isolators which float the basic compressor assembly within the stationary outer shell; built-in suction and discharge line mufflers inside the unit results in quieter operation; motor winding heat is reduced by all suction gas passing directly through the rotor and stator windings; an oil pressure regulator maintains constant oil pressure regardless of operating conditions; a sight glass for checking oil pump operation.

Trane anticipates, by March 1961, installation of the model D compressor in all Trane package equipment requiring 5 and 7½-hp refrigeration units. This includes Trane self-contained "Climate Changers" for commercial applications, and Climate Changer condensing units for residential air conditioning use.

Bryant Plans Schools on Electric Cooling Service

INDIANAPOLIS — Two one-week electric air conditioning service schools have been scheduled by Bryant Mfg. Co. for dealer and distributor personnel.

Classes begin March 6 and April 17. Subjects to be covered include application, installation service, principles of operation, and design modification.

NEWS readers are invited to write to the editor giving their opinions on any subject of interest to the industry.

New Winter Condensing Pressure Controls Introduced by Carrier

SYRACUSE, N. Y. — A new line of winter condensing pressure controls for air-cooled systems which must operate at low outdoor temperatures has been introduced by Carrier Air Conditioning Co.

Four sizes of controls suitable for use in systems of 5 through 15 tons' capacity are offered. Multiple units can be installed in larger systems. Advantages include modulation control with no valves or moving parts other than a standard thermostat.

"The new unit (model 33AA) consists of a pressure vessel equipped with a thermostatically controlled heater, all enclosed in an insulated casing," it was explained. "The control is teed into the liquid line of the refrigerant circuit. The thermostat is set to maintain the refrigerant inside the vessel at 90°F.

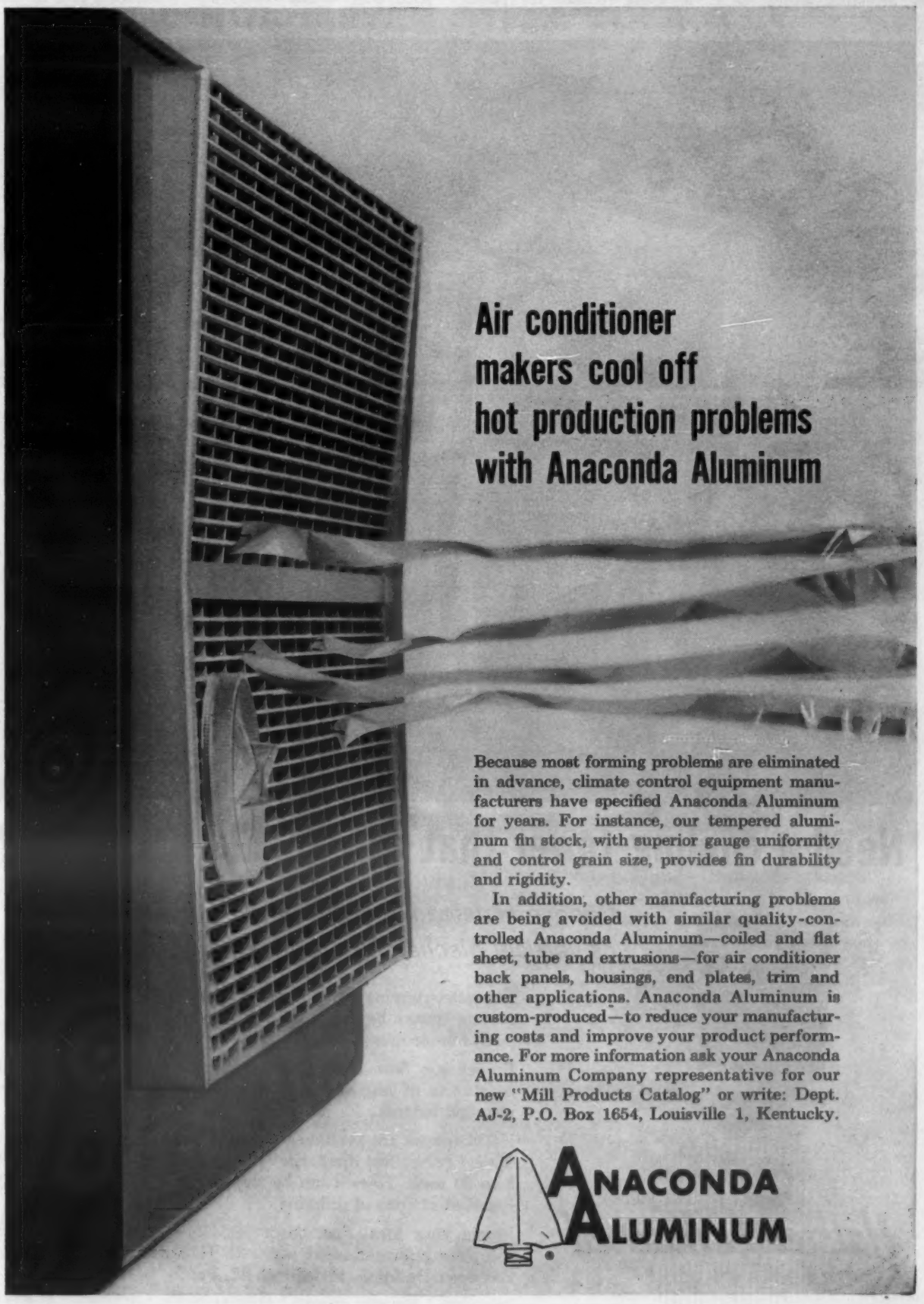
"During winter operation, when the saturated condensing temperature drops below 90°, the thermostatically controlled heater cuts in. Heat vaporizes the refrigerant in the condenser and forces liquid refrigerant out the bottom of the vessel and into the refrigerant circuit.

"The excess refrigerant accumulates in the condenser and reduces the amount of effective condensing surface, causing the condensing pressure and the saturated condensing temperature to rise.

"This action continues until the condensing temperature reaches 90°. Above this temperature, refrigerant will return to the condensing pressure control vessel.

"Controls may be installed in any indoor location where the temperature does not go below 50°. Crankcase heaters should be used on compressors of systems using the control.

CARRIER Model 33AA control.


Air conditioner
makers cool off
hot production problems
with Anaconda Aluminum
Because most forming problems are eliminated in advance, climate control equipment manufacturers have specified Anaconda Aluminum for years. For instance, our tempered aluminum fin stock, with superior gauge uniformity and control grain size, provides fin durability and rigidity.
In addition, other manufacturing problems are being avoided with similar quality-controlled Anaconda Aluminum—coiled and flat sheet, tube and extrusions—for air conditioner back panels, housings, end plates, trim and other applications. Anaconda Aluminum is custom-produced—to reduce your manufacturing costs and improve your product performance. For more information ask your Anaconda Aluminum Company representative for our new "Mill Products Catalog" or write: Dept. AJ-2, P.O. Box 1654, Louisville 1, Kentucky.
ANACONDA ALUMINUM

'First-of-a-Kind Utility Service'

Central Heating and Cooling Plant To Serve Hartford's Constitution Plaza

Idea May Furnish New Source of Income For Utilities In Other Major Cities

NEW YORK CITY—Sale of cooling and heating through utility pipelines is about to begin in Hartford, Conn., and will soon become an important new source of income for utilities in other major cities.

An audience of financial, real estate, and engineering writers and Hartford business leaders was so informed at a recent conference here sponsored by Carrier Air Conditioning Co.

William T. Jebb, president of The Hartford Gas Co., said his utility is investing about $3 million for a central plant and for two miles of steam and chilled water pipelines to establish in downtown Hartford this "first-of-its-kind" utility service.

The new plant will be completed next year and Jebb estimated gross revenues from buildings purchasing heating and cooling would reach $1 million to $1.5 million annually within four years. Carrier will produce the huge water chilling machines for the system.

"A great future" for public utilities in this field was forecast by Erik B. J. Roos, partner in the engineering firm of Seelye Stevenson, Value & Knecht, which made the economic studies for and designed the Hartford system.

50 Likely Projects Across the Country

He said urban renewal projects such as the Hardford plan, completely new developments and extensive shopping centers are likely to have the concentrated air conditioning needs which can provide profitable opportunities for this new utility service.

Analyzing urban redevelopment possibilities, Russell Gray, president of Carrier Air Conditioning Co., cited a list of 50 projects across the country which, with nearby buildings, would require and estimated ⅔ to 4/5 of a million tons of cooling.

If utilities were to provide cooling and heating service, the gross revenues could total $80 to $100 million annually, he said.

The Hartford Gas Co.'s system will sell its air conditioning service in much the same way utilities currently distribute gas and electricity, with meters to determine the amount of steam and chilled water used by each building's air conditioning system.

The central plant will have an initial capacity of 6,500 tons of refrigeration and 150,000 lbs of steam. Chilled water supply and return lines 2 ft in diameter and steam supply and return pipelines a foot in diameter will extend some 3,600 ft from the plant.

Carrier is supplying one 3,000-ton and two 1,500-ton steam-operated centrifugal cooling units plus one 500-ton steam-energized absorption cooling machine.

The system initially will serve Constitution Plaza which is a cluster of three office buildings, a hotel, a broadcasting facility, and a shopping center being constructed as the first step in Hartford's huge downtown redevelopment plan.

It will also handle air conditioning requirements for the main office building and a number of other buildings operated by the Travelers Insurance Co. of Hartford, sponsor of Constitution Plaza.

Will Permit Increased Summer Gas Usage

Jebb said the new service will permit the gas company to increase its gas usage substantially during the summer months in order to produce steam-generated cooling, thus balancing the currently heavy use of gas in winter for heating.

Roos stated the central plant approach had proved to have important advantages in systems designed by his company.

Central Plant Advantages Cited

"Let us compare a central plant serving for example 20 buildings with a total owning and operating cost if each of these 20 buildings had its own heating and cooling plant," he said.

"In this case it is quite obvious that the central plant would not have 20 boilers, 20 refrigeration machine, 20 coal bunkers or fuel tanks, 20 smokestacks, 20 men on duty or 20 times anything else."

Roos continued: "This is the great advantage of a central plant. It has fewer and larger units than that of individual building plants which it may replace. Hence we may say this is in favor of the central plant:

"1. Larger units cost less per unit of output, whether this be pounds of steam or tons of refrigerant. Hence capital cost for equipment is less.

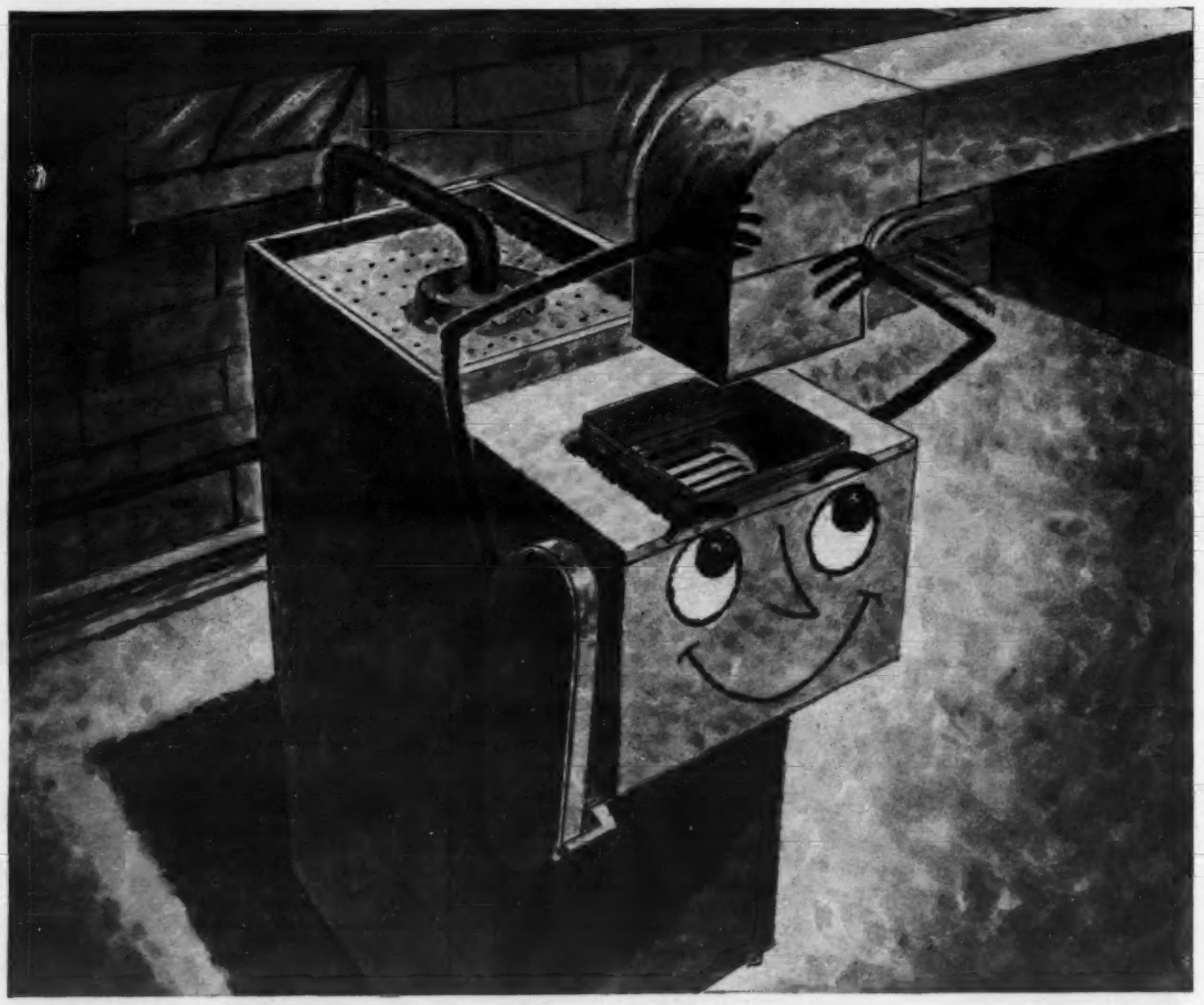
"2. Larger units need less space than a number of smaller units of the same output. Also, a building housing a central plant does not require as expensive construction as would the same space for the same purpose in, say, a hotel, an office building, a television studio, or a department store.

"3. Within the limits imposed by the cost of distribution, a central plant may be located on the least desirable and, therefore, the least costly real estate.

"4. Larger machines can afford greater refinements in design, construction, instrumentation, and control. This results in more efficient operations.

"5. A central plant will have less duplication of auxiliaries, such as fuel pumps, water treatment, etc. Here again, greater refinements and performance result.

"6. Each of the 20 buildings mentioned should have at least two boilers, one being a spare for safety's sake. This requirement often means the near



Need a cooling tower that can handle ductwork?

Choose Halstead & Mitchell with horizontal or vertical discharge centrifugal fans

The quiet-running centrifugal fan in these Halstead & Mitchell cooling towers handles ductwork air friction without strain, pain, fuss or muss!

Proper air flow is maintained against the high, internal resistances of long duct runs when the cooling tower must be installed indoors.

H&M towers are available with horizontal discharge (ECKB Series) or vertical discharge (ECKVB Series) in capacities of 5 to 30 tons. Towers can be shipped as Take-Aparts, too, if specified at time of ordering.

Phone your local distributor for Bulletin ECKB-601 with complete information, or write to Halstead & Mitchell Co., Bessemer Building, Pittsburgh 22, Pa.

HM Halstead & Mitchell

Cooling Towers • Water-Cooled Condensers • Air-Cooled Condensers • Air Handlers • Finned Coils

doubling of equipment and cost. A spare boiler for a central plant of, say, five units means less than 20% more in additional cost. This is a big capital saving.

"7. In a central plant at partial loads, which is the situation most of the time, only enough units, each operating near its point of maximum efficiency, need be put on the line to meet the load. So operation costs less.

"8. A large central plant can usually purchase its fuel and power at lower cost, thanks to good old quantity discount.

"9. Compared to the 20 buildings which I have used as an illustration, a central plant needs much less personnel, and these have no other function to perform than to look after their equipment. Furthermore, better-qualified personnel are needed and can be justified. All of this means more efficient operation of more efficient equipment.

"10. Better-qualified personnel having only one thing to do cannot help but take some pride in what they do. This and the more accurate records kept in a central plant tend to decrease less-than-careful performance.

"These are some of the advantages of a central plant," Roos said.

What Are Disadvantages?

"Now we come to the disadvantages. Generally individual building plants have no external distribution—why should they? However, external distribution is inherent in the central plant and its cost is a distinct debit which may offset the savings of the cost and operation of a central plant.

"1. For practical reasons the external distribution must be run underground, which is of course more costly than merely running piping around inside a building in which it is protected from the weather.

"2. Underground piping and its insulation must be protected against corrosion, electrolytic action, and vibration from traffic above. Where the water table is high this protection becomes more expensive, and also a maintenance problem.

"3. It is obviously less expensive to run piping in sandy soil than through shale or rock, or stuff with bolders in it.

"4. Equally obvious is the fact that when, as is usually the case, the piping is run in streets, the more obstructions due to storm and sanitary sewers, electrical conduit, etc., the more expensive is the installation.

"5. It is clear that to distribute the same cooling and heating load one mile costs more than half a mile.

"6. It is also clear that the longer the piping the greater are the heat losses and gains. Fortunately in this part of the country, the ground temperature is generally about 50° and since chilled water is usually supplied at about 45° the small temperature difference results comparatively small losses.

"As you can see, the above disadvantages are much more subject to strictly local conditions than are the advantages. Hence a careful engineering study is essential whenever and wherever this type of public utility is contemplated."

How To Judge Feasibility Of Installing Plant

"Where does it pay," Roos said, "to install a public utility of this type?

"The two main questions that arise," he went on, "are: Is the load there and what will it cost to produce the stuff?

"In general, we can say that a central plant for this purpose is perhaps justified if the cost of production is estimated to be in the neighborhood of about 6 cents per hour per ton of refrigeration and about $1.20 per 1,000 lbs of steam or equivalent in hot water.

"This is equal to about two cents per 100 sq ft per hour for cooling and 1.2 cents per 100 sq ft per hour for heating. However, this again is subject to local variations in the cost of fuel and power.

"Yet even if the cost of production is in favor of such a central plant, there must be an immediate possibility of selling at least 2,500 tons of refrigeration and about 50,000 lbs of steam per hour. Also this is subject to local variations. As a very rough estimate such a plant and its distribution will require a capital outlay of about $750,000 which cannot lie idle."

Regarding the recently-compiled list of some 50 urban redevelopment plans and projects in 25 major cities, Gray said.

"We asked our district offices to estimate the air conditioning capacities required. This of course is difficult where projects are still in the rough planning stage. Undoubtedly there are some which our study overlooked because we had insufficient information or because the air conditioning requirements did not seem to justify consideration of the utility approach. However, I think you will be interested in the totals we were able to put together.

"As a rough estimate, the projects we compiled will probably represent an investment well in excess of $5 billion. If all of the space were to be air conditioned it would require more than a half million tons of refrigeration.

"When a project developer builds a central plant he is fairly well limited to serving the buildings in his project. But a utility can extend its lines to serve other new and existing buildings. The initial requirements to be served by Hartford Gas Co. have been approximately doubled by the inclusion of existing buildings outside Constitution Plaza.

"Assuming our figure of more than half a million tons of cooling was increased only 25 to 50% by selling to existing buildings or other new structures outside the developments themselves, the potential cooling capacity requirement climbs to something between two-thirds and four-fifths of a million tons. And this together with steam service can be translated into utility revenues totalling between $80 and $100 million annually.

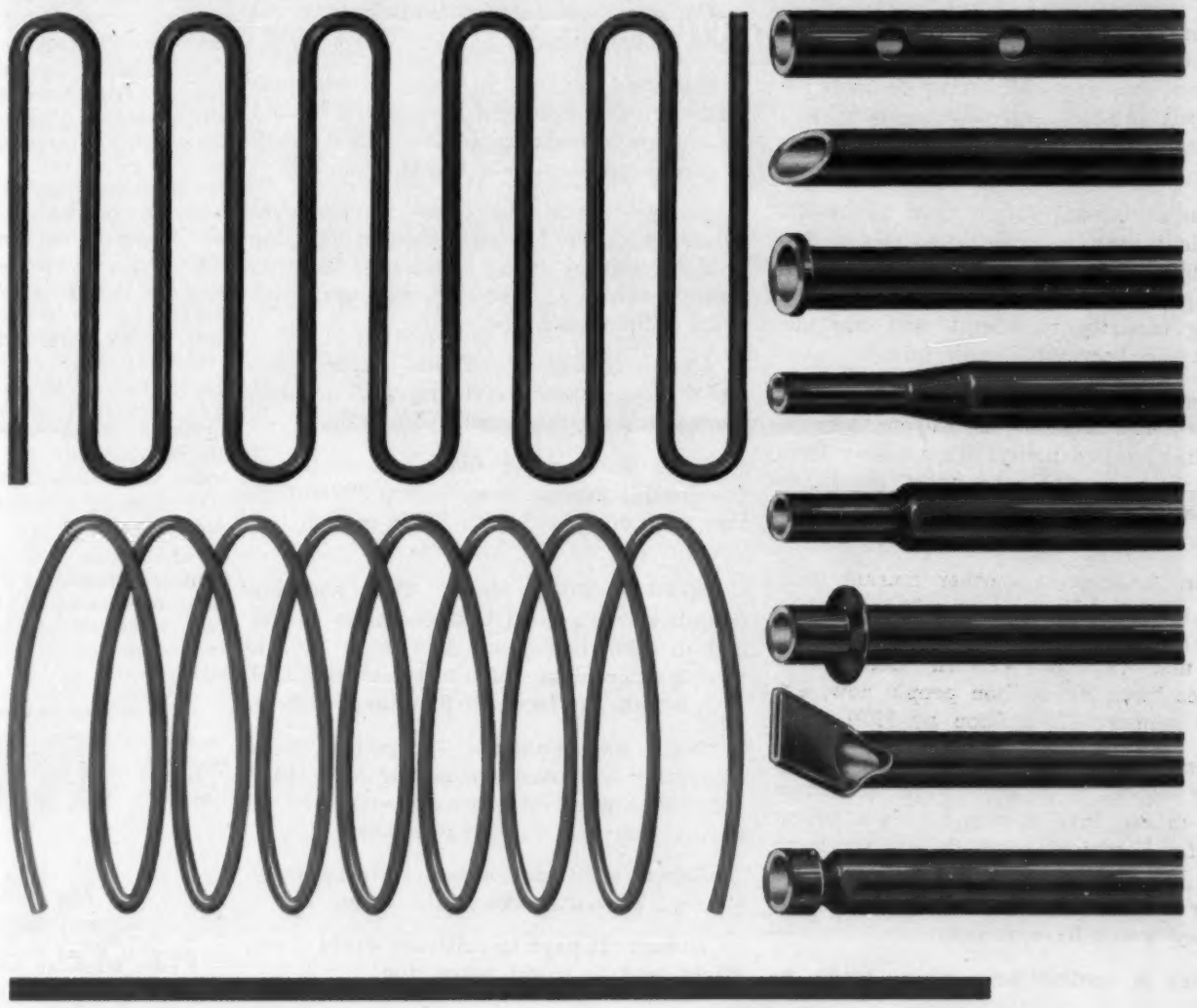
New Utah RACCA Chapter Elects Officers

SALT LAKE CITY — The newly-organized Utah Chapter, Refrigeration & Air Conditioning Contractors Association, has elected R. Jack Hanks of Moore Butcher Supply Co., president.

Robert F. Poulsen, Central Service Co., is vice president; Robert N. Roser of Louis A. Roser Co., treasurer.

The chapter looks toward adoption of an air conditioning code here and in other Utah cities as immediate objective.

TURN TO ROCHESTER STEEL TUBING . . .



your #1 pipeline to RELIABILITY You'll get refrigeration tubing that's made to work the way you want it to work for as long as you specify. That's the very essence of Rochester Reliability . . . and it means a lot to you. Quality Steel Tubing with mechanical strength far beyond normal stresses. The cleanest tubing you can buy. Forming facilities that assure flat-as-a-pancake serpentines. Complete end processing facilities. Coiling, up to 2,000 feet, that readily adapts to modern production lines. And you get this with schedule-meeting delivery service. Just write or wire Steel Tubing Sales Manager, Rochester Products Division.

GM

Rochester Reflects Reliability

GENERAL MOTORS

RP

STEEL TUBING BY ROCHESTER PRODUCTS

ROCHESTER PRODUCTS DIVISION OF GENERAL MOTORS, ROCHESTER, NEW YORK

Editorial

They May Not Love Us Abroad —But They Want Our Goods

OUR AMERICA is selling goods and services abroad at rate of $19.5 billion per year. Exports are running $250 million a month higher nowadays than the average for comparable months of 1960.

Western Europe, Hong Kong, and Japan are stepping up their buying of our stuff the mostest and fastest. Nearly three fourths of our present gains in export trade goes to those areas.

More American goods also are shipping out to Australia, New Guinea, and the Union of South Africa. Canada is buying more from us now than last year, too.

Future opportunities in foreign selling? They're big. Important trends:

Japan has lifted trade restrictions from 270 American-made items, plans to remove even more this year. Customer demand for our sturdy products, already excellent, will improve in years ahead, Japanese authorities predict.

Japan's national output, now about $30 billion in a year, is expected to rise to $60 billion by '70. That means Japan's standard of living is going up rapidly, along with a growing capacity to absorb and use our exports and licensing "know how."

Liberalization of restrictions against American merchandise in Europe also is proceeding satisfactorily. That's why Free Europe has been able to boost purchases from the U.S. by almost 50% in recent months.

Latin America is another market with a great potential for future trade expansion, despite recurrent political shenanigans. South and Central Western Hemisphere countries have 200 million people now, expect to support 270 million by 1970.

Rising standards of living — which inaugur capacity to buy more consumer goods—makes that strategic area a prime target for Communists. Reds will try hard to beat U.S. out in as many Latin countries as they can, and by any means they can. But they won't have it easy.

Africa is another area where trade, in years ahead, should pick up significantly. This uneasy continent has vast untapped market potential for peaceful traders. Example:

Nigeria (40 million consumers) has political stability, sound currency, and is buying more than $535 million worth of goods and services a year from other countries. Trade specialists expect purchases by Nigeria to rise importantly throughout the next dozen years.

Other African nations, currently plagued with political confusion, also will boost purchases of American refrigeration, heating, and air conditioning devices when they settle down.

Capsule comments on additional world trade probabilities:

Canada—way out in front as our best customer. Our northern neighbor is buying an average of more than $314 million worth of goods and services a month from us.

Japan—Second, by close margin over Canada and the United Kingdom. Buying of U.S. goods by Japan is soaring. Monthly average now is $108 million, compared with $77.5 million year ago.

United Kingdom — Trails Japan with monthly purchases averaging $107 million. Last year's average was $73.7 million.

West Germany—Fourth best customer. Its monthly average is exceeding $89 million this year compared with $62.3 million last year.

Mexico — Fifth place. This southern neighbor was second best customer in '58, slid to sixth last year. Mexico in 1961 is buying $68 million worth of goods from U.S. each month—up from $60.9 million last year.

India and Pakistan — Together these struggling countries are buying more than $66 million worth of goods a month from us. Figure year ago was $36.6 million.

Other good customers abroad: Italy, France, Venezuela, Australia, Brazil.

In sum: It pays to cultivate world trade. Might lead to world peace, too!

Air-Conditioning & Refrigeration Institute
Washington 6, D. C.

Editor:

We don't, of course, know the source of the complaint that "ARI is becoming just another engineering body," but we would like to explain, briefly, something about the relationship between standards programs of ARI and ASHRAE.

You may recall that Fred Reed, now Chief Engineer of ARI, was Chairman of the ASRE Standards Committee for some time prior to joining ARI (and for some months afterward).

At that time the relationship between trade association standards and technical society standards was discussed, and it was agreed that rating standards should be written by the trade associations and not by the technical society.

A liaison committee with members from both ASRE and ARI agreed on a basic policy to this effect, and as a result, each group has a rather similarly written manual of procedure and policy for publication of standards within its domain.

A further consideration with regard to the distinction between the two groups is that most of the testing standards being written by ASHRAE are "testing for rating" but ARI Standards frequently include "performance" tests which outline the requirements for operation under various conditions other than those at which the equipment is rated.

For example, many of the ARI Standards include a High Temperature Operating Conditions Test, which establishes ambient and other temperatures at as high a value as the equipment should be expected to be capable of withstanding, and which requires that the equipment operate without cutting off when subjected to these temperatures both at 90% of voltage and at 110% of voltage. A number of other corresponding types of tests are frequently included in ARI Standards.

It would seem that the proper distinction with regard to authority for writing such standards lies in the fact that membership in ASHRAE is on an individual basis and membership in ARI is on a company basis.

Standards of a purely technical nature whose content depends upon the technical knowledge of the individuals practicing the profession of engineering are properly the domain of a technical society—ASHRAE; on the other hand, standards which involve an agreement as to acceptable conditions, procedures, etc., belong in the domain of the trade association whose membership comprises the companies which have to make such agreements.

Another point to keep in mind is that ARI has the machinery and the resources necessary to put on a certification program without which a rating or performance standard can have little value. The truth of this last statement is probably best borne out by the fact that there appear to be people objecting to it.

We don't mean to load you down with a mass of detail, but we feel that since you used your editorial space to answer some of the "objections" to so-call duplication, we wanted you to have a fairly complete background in the matter.

TED KELLOGG, Manager,
Publicity and Information

They'll Do It Every Time

by Jimmy Hatlo

GIBOON FIGURED OUT A WAY TO CONDUCT HIS BUSINESS FROM HIS HOUSE··· A NICE, EASY EXISTENCE···
THIS IS MY LAST DAY KNOCKIN' MY BRAINS OUT COMMUTIN'···STARTIN' TOMORRA I RUN MY BUSINESS FROM HOME···SLEEP AN HOUR LATER···LIVE A NICE, EASY LIFE···
OH, YEAH? WELL, GET A SAMPLE OF THE 101 THINGS HE HAS TO DO BESIDES WORK····
HUH? IT'S ONLY SEVEN O'CLOCK····
WELL, YOU'VE GOT TO RUN THE KIDS TO SCHOOL···BUT FIRST SHOVEL THE SNOW AN' THEN GO PICK UP MY MOTHER···THEN YOU CAN DRIVE US, ETC. AND ALSO ETC. AND THIS AFTERNOON···
THANX AND A TIP OF THE HATLO HAT TO BOB BORST, 230 BIRCHWOOD PARK DRIVE, JERICHO, N.Y.
12-27
© 1960, King Features Syndicate, Inc., World rights reserved.

AN INTERNATIONAL INSTITUTION • SUBSCRIBERS ALL OVER THE WORLD

Trade Mark reg. U.S. Pat. Office; Est. 1926

AIR CONDITIONING HEATING & REFRIGERATION NEWS

Copyright 1961, Business News Publishing Co.

F. M. COCKRELL, *Founder*

'The Conscience of the Industry'

Published Every Monday by BUSINESS NEWS PUBLISHING CO., 450 W. Fort St., Detroit 26, Mich. Telephone Woodward 2-0924. Subscription Rates: U. S. and Possessions and Canada: $6.00 per year; 2 years, $9.00; 3 years, $12.00. All other countries: $10 per year. Single copy price, 40 cents. Ten or more copies, 30 cents; 50 or more copies, 20 cents each. Send remittance with order.

PUBLISHER, George F. Taubeneck
EDITORIAL DIRECTOR, Phil B. Redeker
EDITOR, Frank J. Versagi
ASSOCIATE EDITOR, C. Dale Mericle
ASSISTANT EDITORS: John Sweet, Hugh Mahar, George Hanning
EDITORIAL ASST., Terry Treiber
RESEARCH & PROMOTION DIRECTOR, John MacLean
GEN. PROD. MGR., Walter Schuler
ADV. PROD. MGR., A. M. Barrow
CIRCULATION MGR., Rosalie Ashley
SUBSCRIPTION MGR., Deloris Krol
READER'S SERVICE MGR., Edith King

PRESIDENT, Edward L. Henderson
VICE PRESIDENT & SALES DIRECTOR Robert M. Price
VICE PRESIDENT & ADV. MGR., Allen Schildhammer
WESTERN ADV. MGR., Rex Smith
EASTERN ADV. MGR., Frank Taylor
ADVERTISING OFFICES:
New York, 521 Fifth Ave, MUrray Hill 2-1928-9, Robert M. Price, Frank Taylor
Chicago, 134 S. LaSalle St. FRanklin 2-8643-4, Rex Smith, Dave Ryden
Detroit, 450 W. Fort St. WOodward 2-0924, Allen Schildhammer, Charles Pokorny
Los Angeles, 4710 Crenshaw Blvd. AXminster 2-9501, Justin Hannon

Member, Audit Bureau of Circulations. Member, Associated Business Publications.

VOLUME 92, NO. 8, SERIAL NO. 1,665, FEBRUARY 20, 1961

Armstrong Cork Offers Air Duct, Thermal Insulation, Sound Absorber In One Piece

USE OF ARMSTRONG ARMAGLAS DUCT is said to greatly reduce installation time. It is manufactured to the same inside diameters as standard galvanized sheet metal pipe. It is furnished in 6-ft sections, ready for installation for use with standard galvanized fittings, air boots, register boxes, and other fittings regularly used with round sheet metal pipe.

stallation of self-contained central air conditioning units.

"Armaglas Duct has a k factor of 0.22 at 75°F mean temperature," the announcement said. "The fine glass fibers from which it is made form millions of tiny air spaces that offer great resistance to heat flow. In place, the material offers a noise level reduction of 2 to 3 db/ft. A 6-ft section will reduce the loudness of airborne duct noise by more than 50%.

"Air flow friction losses and air handling capacities are, for practical purposes, the same as for round sheet metal ducts.

"Armaglas Duct is strong and uniform and easy to fabricate for all fittings."

STRAIGHT LINE CONNECTIONS are easy to make by using a short piece of standard sheet metal furnace pipe as a reinforcement and alignment sleeve. After connection is made, the duct ends are taped together with a vapor barrier tape (top photos). Air supply runout connections are made by installing metal connectors as shown in bottom photos. The runout duct is slid over the metal connector and sealed with vapor barrier tape.

Facilitates Later Addition of Cooling

LANCASTER, Pa. — A new prefabricated air duct molded from fine glass fibers and encased with an air-tight vapor barrier has been added to the Armstrong Cork Co.'s line of insulations for air conditioning and heating systems, the company announced.

"The new material, called 'Armaglas Duct,' is an air duct, thermal insulation, and sound absorber in one piece," the company said. "It not only has high insulation value but also greatly reduces application time.

"Armaglas Duct is manufactured to the same inside diameters as standard galvanized sheet metal furnace pipe. It is furnished in 6-ft sections, ready for installation with standard galvanized sheet metal fittings, air boots, register boxes, and other fittings regularly used with round sheet metal ducts."

Armaglas Duct provides a system for heating now and air conditioning later, it was pointed out. When air conditioning is added to the furnace unit, ducts need not be insulated and vapor sealed.

The new duct is for use throughout residential duct systems for heating, cooling, or dual-temperature device. It is said to be suited for attic in-

LOOKING?
FOR REFRIGERANT HANDLING & MEASURING EQUIPMENT . . .

• Charging Stations • Charging Boards • Portable Refrigerant Measuring Tubes • Charging Hoses and Valves • Oil and Methanol Measuring Tubes • Quick Couplers • Tank Stands • High Vacuum Pumps • Manometers • Vacuum Gauges

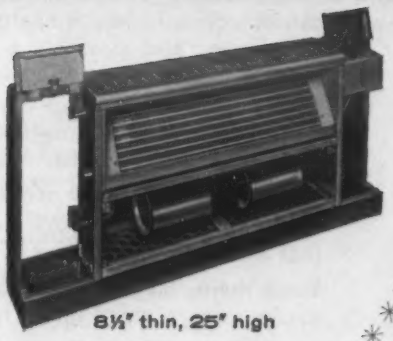
SEE YOUR WHOLESALER OR WRITE US.

AIRSERCO MFG. COMPANY
435 Melwood Ave. • Pgh. 13, Pa.

NEWS readers are invited to write to the editor giving their opinions on any subject of interest to the industry.

Extra large piping compartments, 8½" thin design, complete slide-out fan deck assembly, motor disconnect plug, field reversible coils, full rated capacity and day-to-day quiet, efficient operation . . . these are but a few of the many reasons why so many engineers, contractors and building operators are specifying and installing McQuay thin-line design, individual room Seasonmakers.

Availability in four types and seven sizes and faster, easier installation make them preferred for apartments, hotels, motels, offices or any installation utilizing a central station heating and cooling system. Hideaway and ceiling models range from 220 to 640 cfm. Floor and basic models from 220 to 1240 cfm. Contact your local McQuay representative, or write McQuay, Inc., 1607 Broadway Street N. E., Minneapolis 13, Minnesota for detailed specifications.



8½" thin, 25" high

McQuay Means Quality

McQuay INC.

AIR CONDITIONING • HEATING • REFRIGERATION

New Line of Bulk Milk Farm Tanks Available

● The availability of a new line of bulk milk farm tanks has been announced by the Paul Mueller Co., Dept. AH&RN, Kansas Ave. at Phelps, Springfield, Mo.

The tank is designed to allow the smaller producer to "go bulk" at a low initial cost while getting the benefit of many of the features of more expensive models, according to the company.

The new model "R" Series tanks are being produced in three sizes —150, 200, and 300 gal. for remote installation of the condensing unit or as self-contained units. The standard model meets 3-A sanitary standards and features stainless steel top and inside, greaseless agitator motor, built-in control panel, stainless steel evaporator coil, and clamp-on plug-type outlet valve, it was stated.

Permanent Caulking Sealant Introduced

● "Pliogrip 12-3," a permanent caulking sealant recommended for caulking areas around air conditioning and heating conduits, among other uses, is being manufactured by Goodyear, and packaged and distributed nationally by W. J. Ruscoe Co., Dept. AH&RN, 483 Kenmore Blvd., Akron 1, Ohio.

The product "has outstanding outdoor durability, skins over quickly, adheres well to metallic, ceramic, and wood surfaces, and is resistant to all climatic conditions," the company said.

'Cheekmaster' Can Be Set In Seconds

● Through the use of a new machine called a "Cheekmaster," any sheet metal shop can turn out cheeks for rectangular elbows quickly and accurately, according to Duro Dyne Corp., Dept. AH&RN, Route 110, Farmingdale, N. Y.

"The Cheekmaster can be set in seconds to produce cheeks having a radius of from 3 to 12 in. and an opening of from 3 to 30 in.," the company said. "No layout is required and the cutting is done by an electric shear which is built into the machine.

Offer Developments In Insulating Plastic Foams

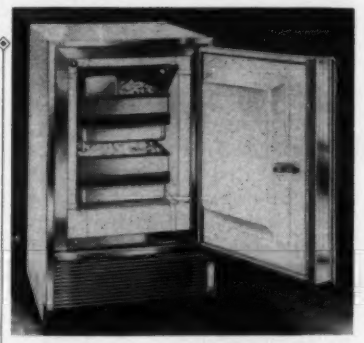
● Two major developments in insulating plastic foams were announced by The Dow Chemical Co., Dept. AH&RN, Midland, Mich. They are:

1. Rigid urethane foam boards "with high solvent resistance and heat distortion and low thermal conductivity. (The permanent 'K' factor is .16 to .17 at 70°F.)" Trade-marked "Thurane," the new foam will be priced approximately 20% higher than "Styrofoam" on an equivalent insulation basis and 90% higher on equal thickness."

Dow expects significant applications in refrigeration appliances, pipe and refrigerator truck insulation, roof insulation, and sandwich panel and low temperature space insulation.

2. A new blue Styrofoam brand insulation board "with flame-retardant properties and designed to replace other forms of Styrofoam in major construction applications." Dow said the product will be "competitively priced." The product will replace Styrofoam 33, the previous Dow flame-retardant polystyrene foam introduced in 1952, the company pointed out.

It is also expected to replace Styrofoam 22 in the construction industry.



Ice Maker Can Be Built-In, Free-Standing

● A self-contained model 200UCI-1 automatic ice maker has been added to its 1961 line of refrigeration equipment by Sub-Zero Freezer Co., Inc., Dept. AH&RN, P.O. Box #2017, Madison, Wis.

It has been designed so that it can be used as a free-standing piece of equipment or as a built-in if desired. A flange trim kit is available for built-in installations if needed.

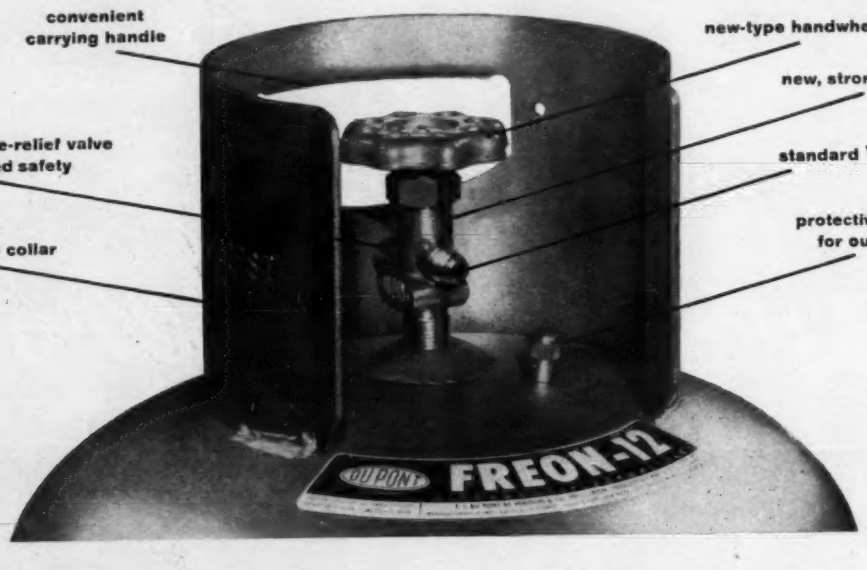
The over-all outside dimensions are: height, 34½ in.; width, 18 in.; depth, 24 in. Ice capacity is 340 crescent-shaped ice pieces per day (16 lbs.). Front panels are removable and the lift-off front grille provides easy access to compressor and air movement around compressor. When built in, this model requires no special venting construction or special cabinet to house the equipment, according to the company.

Thermoelectric Kit Has Been Expanded

● The development of its new Type 300 Thermoelectric Experimental Kit designed for electronic, industrial, medical, and educational organizations has been announced by General Thermoelectric Corp., Dept. AH&RN, Princeton, N. J., a joint subsidiary of General Devices, Inc., and Needco Cooling Semiconductors, Ltd.

"This kit, a greatly expanded version of the initial K-1 kit, is being introduced to make it possible to obtain empirical knowledge directly of thermoelectric materials, principles, and techniques in a planned and organized manner," it was explained.

Contained in the kit are typical "Frigistor" cooling modules made of Neelium, thermoelectric material now in production, as well as all the necessary hardware to conduct a broad spectrum of basic experiments in thermoelectric cooling and power generation, it was stated. An additional feature is a 38-page instruction book and laboratory manual.



See your wholesaler now for a new "Zephyr"

Redesigned valve makes "Zephyr" cylinders for FREON® stronger, easier than ever to use

While service engineers praised the light weight and convenient shape of the first "Zephyr" cylinders, they suggested several additional improvements. We've made them—to make your job of handling Freon* premium quality refrigerants even easier. And your refrigeration and air conditioning wholesaler now has these newest "Zephyr" cylinders for you—with a free bonus to boot!

COMPLETELY NEW VALVE. "Zephyr" cylinder valves have been redesigned to provide new convenience, strength and safety. Wrenches or adapters are no longer needed. You can now operate the valve with a strong but easy-to-turn handwheel—and attach charging hoses directly to its standard ¼-inch outlet. The entire valve assembly is stronger and contains a built-in pressure-relief device which, with the fuse plug in the cylinder, makes the "Zephyr" the safest service container you can buy.

Add these new features to all the other conveniences of "Zephyr" containers for "Freon-12" and "Freon-22", and you can see why it will pay you to get your new, factory-filled "Zephyr" cylinders now.

Carry them. "Zephyr" cylinders are lightweight, with a built-in carrying handle that also protects the valve . . . now make a 50-lb. size practical.

Stack them. "Zephyr" cylinders are wider, shorter . . . can be stacked for space-saving storage, stand up on trucks.

Invert them. "Zephyr" carrying handle also acts as a stand, needs no blocks, permits easy liquid charging.

FREE BONUS OFFER! Look for the bonus envelope attached to your new "Zephyr" cylinder. It entitles you to a free can of new Du Pont aerosol "Slipspray"—a *dry*, all-purpose lubricant with hundreds of uses at home or work. "Slipspray" leaves no oily film . . . stops sticking, binding, squeaking on all surfaces. Offer expires June 30, 1961.

FREON® *premium quality* **REFRIGERANTS** DU PONT Better Things for Better Living . . . *through Chemistry*

*"Freon" and combinations of F- with numbers are Du Pont's registered trademarks for its fluorocarbon refrigerants.

G-E Offers Display Rack For Room Units

● A new portable rack for displaying General Electric 1961 room air conditioners has been announced by the Room Air Conditioner Dept., General Electric Co., Appliance Park, Dept. AH&RN, Louisville 1, Ky.

The new rack will accommodate three air conditioners without taking up more floor space than conventional two-unit stands, it was pointed out. Add-on sections consisting of three shelves and an extra leg permit mass, multi-unit displays. A portable rack header which sets on top of the unit on the top shelf is also available.

The caster-mounted rack is made of heavy duty steel finished in oyster white baked enamel to harmonize with the 1961 G-E units. Measuring 64¾ in. high, 29½ in. wide, and 20½ in. deep, it holds over 600 lbs.

Packaged Generator Line Announced

● Production of a new line of packaged generators as part of an expansion of operations in this field has been announced by Iron Fireman Mfg. Co., Dept. AH&RN, 3170 W. 106th St., Cleveland 11, Ohio.

"In response to the increased tempo of commercial-industrial construction and the growing trend towards package generators backed by a single corporate responsibility, this new series of equipment will carry the Iron Fireman label only — and Iron Fireman alone will be responsible for its design, workmanship, and materials," it was stated. "The company's established network of franchised dealers will be responsible for sales and servicing."

To head this expanded operation, Iron Fireman has appointed Gilbert Nelligann to the newly-created post of sales manager-package generator department. Nelligann is a 30-year veteran of the heating industry.

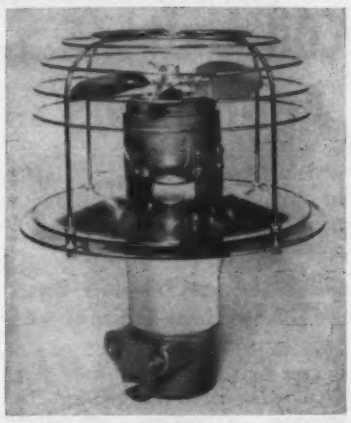
Iron Fireman also noted it will continue its manufacture of gas, oil, and gas-oil burners—both as separate equipment and as part of boiler-burner combination units.

"These boiler-burner units — high and low pressure, steam and hot water models—are distributed in cooperation with several prominent producers of boilers on the basis of separate production, separate label, and separate responsibility," the company noted. "With a range of 50 to 600 hp, they are applicable to the smallest of commercial buildings up through large heating and process load installations."

Adhesive-Back Nameplates

● "Autographs" adhesive-back nameplates for name advertising products sold and serviced by dealers are now offered in more than 90 die-stamped sizes by Metalcraft, Inc., Dept. AH&RN, Mason City, Iowa.

Humidifier Claims Simplicity, Economy



● A "Steamette" humidifier claimed to provide simplicity and economy of installation and operation with high evaporative capacity is being offered by The Bahnson Co., Dept. AH&RN, 1020 Marshall St., Winston-Salem, N. C.

"The Steamette discharges the steam vapor in a 360° radial pattern, or portions of this discharge may be blanked off as required," the company pointed out.

"Installation of the lightweight Steamette is easily made by connection to existing steam supply lines and electrical outlets," it was stated. "The Steamette uses an atmospheric drain line rather than a condensate return line to the boiler. Therefore, no steam traps are required.

"Design of the humidifier permits re-evaporation of steam condensate in the unit during the operating cycle. However, the drain line is required to remove excess line condensate on start-up. As a result of this design, condensate loss is negligible and economic operation is outstanding.

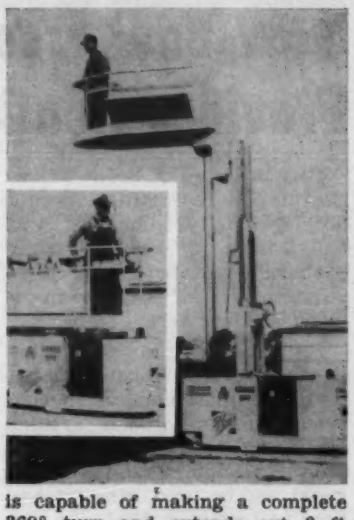
The Steamette humidifier is normally supplied complete with a steam solenoid valve assembly including steam strainer, pressure gauge and gate valve, in addition to the automatic control, the manufacturer says.

Mobile Hydraulic Telescoping Lift Available

● The "Sky Liner," a mobile hydraulic telescoping platform lift with a rotating platform, has been announced by Grand Specialties Co., Dept. AH&RN, 3101 West Grand Ave., Chicago 22, Ill.

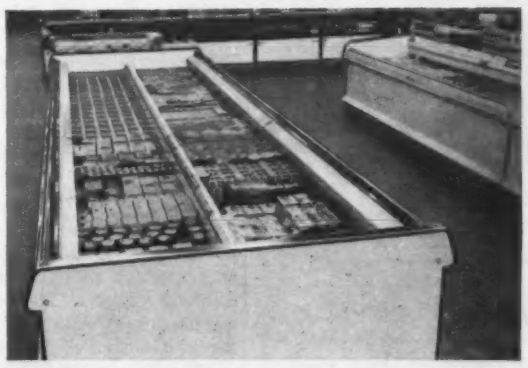
"Designed for 'high reach' installation and maintenance work, the unit may be operated by a single man," the company stated. "It raises from a minimum height of 8 ft to a maximum height of 15 ft and features a self-contained water system with convenient three compartment sink on the platform—a 30-gal tank in the base. The water system is operative while the unit is in motion.

"Motivated by a 24-volt battery through pushbutton control, the Sky Liner may be operated in either of two speeds. The platform is capable of making a complete 360° turn and extends out 6 ft 6 in., making it possible for operator to reach over shelves, tables, etc. Rigidly constructed, the Sky Liner has a capacity of 400 lbs."



More details on the products described on these pages may be obtained by writing the manufacturer at the address given in each story.

Meat processing "peninsula" projects into store; McCray merchandisers around it sell fresh meat profitably.



Clean-cut McCray Double Island with giant capacity is ideal for Dilbert's high volume on frozen food.

in Dilbert's Brentwood it's McCray!

Color and excitement are the aim of this striking new Dilbert Market in Brentwood, Long Island, and new McCrays catch the mood perfectly. In all departments for perishables, McCrays display merchandise beautifully and all but hand it to customers.

See for yourself why McCray's are breaking sales records year after year for both supermarkets and distributors. Send for information on complete McCray line.

McCray

REFRIGERATOR COMPANY, INC.
201 McCray Court
Kendallville, Indiana, U.S.A.

70 years of Leadership in Building Dependable Commercial Refrigerators

MANUFACTURING LICENSEES

D. G. M. Refrigeration Ltd.
10-14 Young Street
Sydney, Australia

Smithfield Refrigerator Co., Ltd.
High Street—Hornsey
London, N. 8, England

Jean Neuhaus, S. A.
18, Rue Charles Laffitte,
Neuilly—S/Seine, France

Elsfink
Carl Fink, O.H.G.
(14A) Asperg/Wurtt, Germany

Electricidad y Temperatura,
S. A. "ELYTE,"
Julian Camarillo 43, Madrid, Spain

McCray
Refrigerator Company
of Canada, Ltd.

EXPORT DEPARTMENT
Silicox Refrigeration Corporation
70 Pine St., New York 6, N.Y., U.S.A.

Floor-to-Ceiling Glass Poses Problem

'Low-Boy' Free Standing Fan-Coil Unit Provides Heating, Cooling for Apartments

CHICAGO — A new "Low-Boy" free standing fan-coil unit, developed by Modine Mfg. Co., has solved a heating-cooling problem posed by architectural requirements of a new apartment building here.

Preliminary study, according to Modine, had indicated that it would be uneconomical to consider a central ducted system. However, standard fan-coil units, standing 25-in. high, could not be used, since it had been determined that the exterior of the building would be floor-to-ceiling glass.

The possibility of locating the fan-coil units at the wall corner or overhead at the ceiling was considered. However, both possibilities were ruled out as either too unsightly or too inefficient when compared with installation in front of or directly below glass where heating and/or cooling loads are greatest.

Lake Meadows 600 Project —Building 10, Chicago.

OWNER:
New York Life Insurance Co.

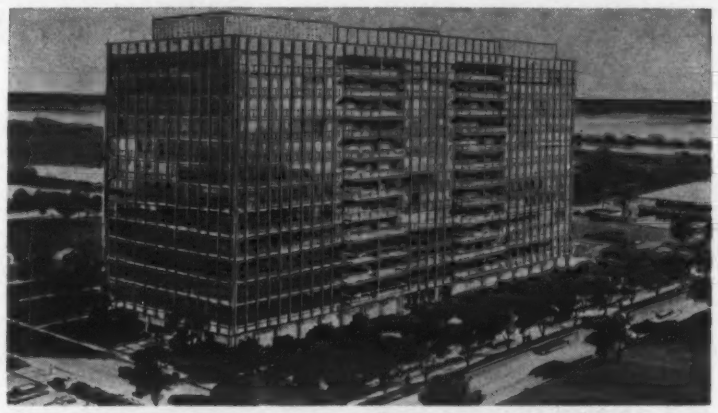
ARCHITECTS & ENGINEERS:
Skidmore, Owings & Merrill, Chicago.

MANUFACTURER:
Modine Mfg. Co., Racine, Wis.

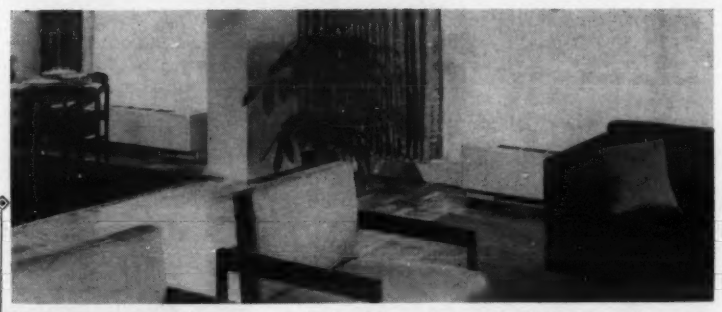
Placement at Window Base Offsets Heat Gain or Loss

With the unit located at the center of the window base, conditioned air could blanket the window exposure, off-setting heat gain or loss and providing pin point temperatures.

The "Low-Boy" free standing fan-coil unit was evolved, standing only 14½ in. high and provided with means for horizontal air distribution to insure coverage during the heating season. 550 Modine Low-Boy Airditioners were eventually installed in Building 10.



MODEL OF Lake Meadows 600 Project—Building 10 shows exterior effect of floor-to-ceiling glass. Use of Modine Low-Boy Airditioners was said to enhance the effect created by the architect.



INTERIOR OF ROOM showing installation of Low-Boy units, which are said to provide no obstruction visually or for light. Installing units a few inches from wall provides clearance for draperies.

The new Modine cooling and heating unit immediately solved the problems, the company stated.

The "Low-Boy," with its fan-coil operation, utilizes two small diameter pipes and is fed hot or chilled water as the need dictates from a central source. These two pipes, as well as drain and electrical conduit are all located above the floor and are concealed within an inexpensive metal chase behind the unit which extends from wall to wall. The chase looks like part of the building's architectural design.

The unit is installed free-standing on the floor a few inches in from the wall to provide clearance for drapes. There is no obstruction visually or for light.

Occupant Has Maximum Control of Temperature

Occupants have maximum control over cooling or heating performance and air delivery in their individual rooms.

Some of the other features of this unit include:—Multi-speed motor control; Coils are installed with fin edges vertical over the drain pan: Condensate cannot fall into fan housings or on floor; Year-round comfort: Recirculated air is filtered and dehumidified as well as heated or cooled; Low power consumption: Units are equipped with permanent, split capacitor motors; Ease of maintenance: Cleanable filters are changeable without removing front panels.

The building is zoned to permit simultaneous cooling in one area and heating in the other when the season is changeable.

"In applying this new unit we came up with a cost of about $975 a ton and we saved approximately $45,000 by using this system rather than the induction type," stated Samuel Sachs, chief engineer of Skidmore, Owings & Merrill.

"The operating costs of the fan-coil system are approximately $13,200 per year for the air conditioning operation and $22,100 annually to cover heating costs.

"An air distribution baffle along the rear of the coil, proportions the air evenly through the coil and stamped outlet grille, assuring an even air discharge pattern. Mastic and insulation isolate all operating elements from the room," the engineer concluded.

Wm. A. Lake Named Marketing Vice Pres. At York-Shipley

YORK, Pa.—The appointment of William A. Lake as vice president in charge of marketing at York-Shipley, Inc., has been announced by Lavern H. Brenneman, president.

W. A. Lake

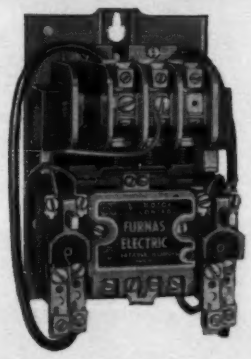
Lake was formerly manager of distributor sales for Carrier Corp. He has been with Carrier in various positions for nine and one-half years and has been active in the heating business for the past 12 years.

Brenneman stated that Lake, operating in a staff position, would be responsible for the planning of the future merchandising programs of the company's heating products, including its "York" industrial and commercial steam generators, "Jackson & Church" industrial and commercial warm air furnaces, and its "York" residential boiler and furnace lines.

Army Lets Contract For School Cooling

MOBILE, Ala. — Announcement was made that Independent Plumbing & Heating Co., Inc., Jackson, Miss., has received a $5,515 contract for air conditioning classrooms and offices at Jackson Army Reserve Training Center.

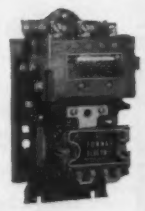
new CURRENT RATED STARTERS



Through 53 amps, rated in full load and locked rotor. Can be used for both 220 volts and 440 volts.

new CURRENT RATED CONTACTORS THROUGH 90 AMPS.

Furnas Electric offers a complete line of current rated contactors through 90 amps meeting requirements of the Air Conditioning and Refrigeration Industry.



90 amperes

Contactors through 40 amps, 2, 3 and 4 pole with interchangeable mounting dimensions are available for compressor and electrical heating applications.

40 amperes

2 and 3 pole, 25 amp contactors are used for unattended domestic and commercial applications, and for resistance heating applications.

25 amperes

Write for Free Bulletin 05-B1
1111 McKee St., Batavia, Illinois

A95

FURNAS ELECTRIC COMPANY
BATAVIA, ILLINOIS
SALES REPRESENTATIVES IN ALL PRINCIPAL CITIES

Packaged Multi-Zone Air Conditioners

How One Manufacturer Goes About Designing New Line (4)

How does a manufacturer go about designing a new line of air conditioners? What factors are considered in the selection of components like compressors and coils, evaporators and controls? How much weight is given to design considerations, to application engineering?

In this series of articles, Alfred D. Sullivan, development engineer for American-Standard Industrial Div., offers a lucid account of the birth of a new product.

By Alfred D. Sullivan, Development Engineer, American-Standard Industrial Div.

Designing Control Panel

It was thought desirable to have all elements of the electrical control system in one box to expedite field connecting and trouble-shooting. No single phase of air conditioning maintenance can be more time consuming than that associated with the electrical system.

The motor starters, contactors, and overload relays are housed in one area completely wired to compressor, fan motor, crankcase heater, and liquid solenoid valve. This arrangement requires only connection of power to the line terminals of the starters in order to operate the unit.

The control system proper includes a combination high pressure-low pressure switch and an oil pressure failure switch. Fig. 7 shows a typical elementary wiring diagram for these units. A transformer, fused for safety, is included to reduce line voltage to 115 volts.

A pump-down relay is provided which lets the compressor run, after the thermostat is satisfied, to exhaust the contents of the evaporator into the condenser. The relay wiring is such that subsequent starting is not allowed until the thermostat again closes. This arrangement makes the volume of the evaporator available to contain refrigerant which migrates from the condenser without the ruinous short-cycling of the compressor which would attend operation controlled by a low pressure switch only.

Thermal overload switches protect fan motor and compressor motor, opening the holding coil circuit when the current exceeds 125% of nameplate amperage. These overloads are self-resetting, which ordinarily would cause objectionable fast-cycling of the motors. In this arrangement, however, the motors will not restart after a trouble shutdown until the reset relays are actuated. This can be done by breaking and then remaking any device in the holding coil circuit. A remote room thermostat or a toggle switch on remote control panel, for example, can serve to reset the overload.

The necessity of repeatedly resetting the relays should, of course, be considered a warning of malfunctioning.

Another relay provided makes and breaks the circuit to the crankcase heater as the compressor stops and starts, respectively.

Pressure-sensitive switches, thermal overload breakers, and the lubrication-failure switch protect the equipment but do not simplify trouble-shooting, since the devices are connected in series and any one of them can cause the machine to stop.

In this panel, however, eight indicating lights are connected across important points in the circuit. An amber light indicates that the main circuit is energized, another that the liquid line solenoid is powered, and a white light means that the crankcase heater is connected. Five red lights denote open holding coil circuits due to (1) low oil pressure, (2) high or (3) low refrigerant pressure, (4) overloaded compressor, or (5) overloaded fan motor. A built-in lamp under control of a separate toggle switch illuminates the gauge panel and the interior of the control box.

Pressure gauges usually are good for only a few hours on pulsating service before the gear sector jumps a cog or one of the gear teeth is worn away.

The useful life of gauges can be lengthened by valving them off from the system when not in use. Such valves are provided for these gauges which indicate discharge, suction, and oil pressure. In addition, the gauge specification calls for a bronze-bushed movement and packing with silicone grease. Both of these measures greatly increase the life of gauges which measure pulsating pressures.

(To Be Continued)

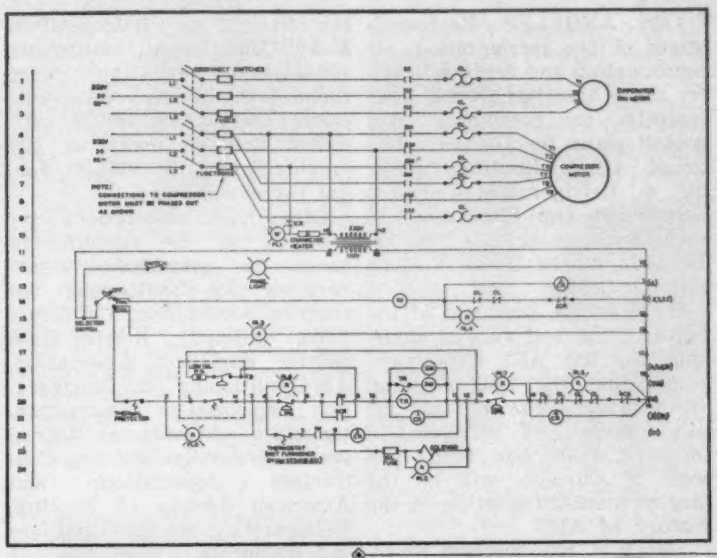


FIG. 7—Typical elementary wiring diagram for part winding starting system in packaged multi-zone air conditioners.

Fine Unlicensed Contractor In L. A., Cooling Installation

LOS ANGELES—Lloyd West, doing business as West Electric Co., recently was found guilty, in Div. 59, Los Angeles Municipal Court, of contracting without a license by installing an air conditioning unit in the home of a local attorney, it has been reported.

A 30-day jail sentence was suspended upon payment of a fine of $105 and $336.35 to the attorney, A. Ronald Button, as restitution for damages done to his home.

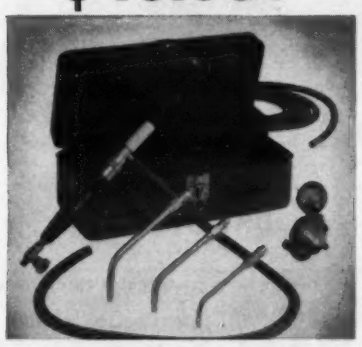
The Los Angeles Dept. of Water & Power referred Button to the Certified Refrigeration & Air Conditioning Foundation on his complaint that West cut through and removed all load bearing supports and partitions supporting the load of the upstairs bedrooms.

When the foundation ascertained that West was not licensed as a contractor, it referred the complaint to John Chadwick, new registrator of contractors, Contractors' State License Board. The latter's office complained to the Los Angeles city prosecutor and the conviction resulted.

In reporting on this case, the Refrigeration & Air Conditioning Contractors Association of Southern California said it is interested in finding out how West "obtained this air conditioning equipment from the manufacturer." The association added:

"Unanswered question: Does a supplier when selling equipment to an unlicensed contractor conspire to violate the State Contractor's License Law?"

BUILD YOUR BUSINESS ON $43.00!



Install • Service • Find and Fix Leaks with the

PREST-O-LITE

Refrigeration and Air Conditioning Outfit

This single compact kit costs only $43, yet contains every essential piece of equipment for your work. You get three interchangeable open-flame stems to provide the right air-acetylene flame for soldering, brazing, or heating. Fit the sensitive leak detector stem to the same torch handle, and you can pinpoint the tiniest halide gas leaks—as little as 100 parts in 1,000,000 parts of air. Compare that with soapy water!

In one sturdy carrying case, the kit also includes an adjustable gas pressure regulator, torch handle, and hose—everything for the installation, repair, and everyday maintenance of all types of refrigeration and air conditioning systems. See your local *Prest-O-Lite* dealer. Or write Linde Company, Division of Union Carbide Corporation, 270 Park Avenue, New York 17, N. Y.

LINDE COMPANY — UNION CARBIDE

"Linde," "Prest-O-Lite," and "Union Carbide" are registered trade marks of Union Carbide Corporation.

Trying to find the right man for a hard-to-fill vacancy—the NEWS' Classified Ads are read by your man.

Place your ad today!

NOW!

For the first time! complete humidification system in one package!

HOMEOWNERS GET MORE MOISTURE-MILEAGE WITH Skuttle's NEW

CORMAIRE Model 900 Humidifier!

This flexible, high quality unit is designed to provide controlled humidification during the entire heating season. The CORMAIRE* uses 20 Vapoglas plates in a corrosion resistant evaporating pan. It can be used as a plate type humidifier, as a controlled humidifier, using the cycling switch or as a completely automatic humidification system, with the utilization of the cycling switch, plus a relay transformer and humidistat as optional equipment.

As an added feature a Swiss made, precision built Hygrometer is included with each CORMAIRE* unit. This instrument indicates the percentage of relative humidity in the air.

Skuttle New low-cost DusT-ban Filters

These LOW-PRICED ($4.95 ea.) permanent filters have electrostatic qualities and are easily washed without oiling. They are framed in zinc-coated steel for rugged, rust-resistant wear. The electrostatic action of the Skuttle DusT-ban Filters guarantees removal of dust, dirt, and pollen particles allowing the free flow of air for maximum heating or cooling efficiency. Sizes 16" x 20" x 1"; 16" x 25" x 1"; 20" x 20" x 1"; 20" x 25" x 1".

A FREE Filter Gage (Value $1.95) is given to each customer with the purchase of 2 Skuttle DusT-ban Filters or $1.00 with the purchase of 1 filter.

*CORRECT MOISTENED AIR

Skuttle MANUFACTURING COMPANY MILFORD, MICHIGAN

IN CANADA: WAIT-SKUTTLE CO., OAKVILLE, ONT.

Warren Webster Names Morgan

CAMDEN, N. J.—Andrew F. Ward, vice president-marketing, Warren Webster & Co., Inc., has named David E. Morgan vice president - contract sales.

D. E. Morgan

Morgan has been, for the past five years, director of research and development for the manufacturer of heating and air conditioning equipment.

Regarding Morgan's takeover of the newly-created Marketing Div. post, Ward commented: "Webster's long history of experience in the design and manufacture of heating and cooling products makes increased sales volume in the area of contract and allied sales a natural outgrowth of the corporation's marketing position."

Airtemp-IUE Agreement Ratification Reported

DAYTON—Ratification of an agreement between Airtemp Div., Chrysler Corp., and Local 758, Professional, Technical & Salaried Conference Board, IUE, was reported recently.

The contract is the first since the IUE won bargaining rights for the Airtemp salaried workers following an NLRB election last September. It covers 290 office-clerical and technical employes.

Launch Plans for 12th ARI Exposition To Be Held In Los Angeles Feb. 12-15, 1962

LOS ANGELES—Representatives of five refrigeration, air conditioning, and heating industry trade associations met here recently to coordinate and launch plans for the 12th National Air-Conditioning, Heating & Refrigeration Industry Convention and Exposition, to be held in Los Angeles Feb. 12-15, 1962, at the Great Western Exhibit Center.

H. T. Jarvis, president of the Recold Corp. and general chairman for the ARI Exposition, stated that the 1962 meeting, the first time the national air conditioning and refrigeration industry show has been held west of Chicago, will be the largest attended meeting in the history of ARI.

Henry B. Ely, western representative of the Refrigeration & Air Conditioning Contractors Association, said that more than 15,000 industry representatives will attend. It is estimated that as many as 500 manufacturers will exhibit during the exposition.

Other trade associations represented on the coordinating group in attendance were: Western Air-Conditioning Industries Association, California (and national) Refrigeration Service Engineers Association, Air-Conditioning & Refrigeration Wholesalers association, the state and national Refrigeration & Air Conditioning Contractors Association, and American Society of Heating, Refrigerating & Air-Conditioning Engineers.

Hagle, Briggs Form Southeast Sales, Inc.

WINTER PARK, Fla.—Harry Hagle and R. R. Briggs have joined to form Southeast Sales, Inc., a manufacturers' representative firm covering Florida.

The new firm is engaged in the sale of heating and air conditioning equipment and allied products. Representing such companies as International Heater Co. of Utica, N. Y., and Paco Industries of New Jersey, the firm members call on wholesale distributors throughout the state.

With offices and warehouse facilities located centrally in the state in Winter Park, the firm offers to manufacturers, seeking representation in the heating/air conditioning field, stocking and handling facilities for expediting orders to potential distributors, it was pointed out.

Bob Briggs, a graduate of Northwestern university and formerly general manager of Southern Metal Products Co., Inc., Miami, has been engaged in the sales and promotional aspect of the heating/air conditioning and plumbing supply business since 1945.

Harry Hagle, a graduate of Ohio Northern university, is president of Hagle Supply Co., Inc., a distributing firm located in Newburgh, N. Y. In January of 1959, Hagle established Hagle Sales, Inc., factory representative covering Florida for International Heater.

Astro Products Names Karger

LINDEN, N. J. — Henry Karger's appointment as vice president-engineering has been announced by Astro Products Corp. here, manufacturer of components for air conditioning and refrigeration as well as systems for special applications.

H. Karger

Born in Germany, Karger attended school and college in Ohio. He has been a project engineer for the National Bureau of Standards, a development engineer in room air conditioning for York, and a senior project engineer in air conditioning for Emerson Radio & Phonograph Corp.

Marsh Names Warner

SKOKIE, Ill.—Don L. Warner has been appointed assistant sales manager of Marsh Instrument Co., division of Colorado Oil & Gas Corp.

Warner has been with Marsh Instrument for the past ten years, most recently as district manager of the Philadelphia office.

World Trade Corner

REMINGTON CORP., Auburn, N. Y., announced the appointment of Carlos E. Dominguez as export manager. He was formerly regional manager for air conditioning and other specialties of Chrysler International, S. A., with headquarters in Havana, Cuba.

Dominguez

* * *

KELVINATOR INTERNATIONAL CORP., subsidiary of American Motors Corp., announced a new Italian licensee for the manufacture of household and commercial refrigeration equipment.

Kelvinator Italiana, S.p.A., located at Milan, is already in operation, manufacturing Kelvinator products for distribution in Italy and for export to the Middle East, South Africa, Common Market countries, and other European markets. The new company includes the shareholders of a former licensee, S.A.F.E.T., S.p.A.

* * *

GENERAL ELECTRIC CO'S General Purpose Control Dept. has named Richard T. Perkins manager-foreign business operations. He has been manager-engineering administration.

* * *

DRAYER-HANSON'S export representative, Barry T. Benson, is on a month-long tour of the company's Pacific distributors in Guam, Manila, Hong Kong, Bangkok, Singapore, and Australia. In Brisbane, he will welcome Messrs. McBride and Gardiner of Buzacotts (Queensland), Ltd., as the first appointee since the Drayer-Hanson, Hi-Press Air Conditioning of America merger.

* * *

C. V. HILL & CO., INC., Trenton, N. J., reported that its European licensee, Ges. Fur Linde's Eismaschinen A.-G., Mainz-Kostheim, West Germany, is finalizing production plans for a complete line of refrigerated merchandisers for meats, dairy, and frozen foods.

It said Linde is setting up a "vast" sales organization throughout western Europe and Great Britain "to keep pace with the increasing trend of European food market operators to convert to self-service operations." Linde's future plans call for a new plant designed exclusively for the manufacture of Hill refrigerated market equipment. Hill said other working agreements are nearing completion in Argentina and Mexico.

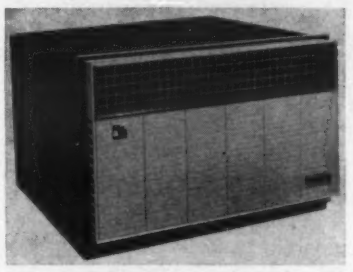
* * *

THE 2ND heating, air conditioning, refrigeration, and hydrosanitary exhibition and conference will be held in the SAEN Pavillon at the Milan Fair, Milan, Italy, March 1-7. Two conferences will be held: one on heating and air conditioning regarding air pollution, organized by the Italian Overseas Branch of ASHRAE; the other on hydrosanitary plans.

* * *

OPPORTUNITIES for American investment and industry in Australia will be described by some 15 authorities at the American Management Association's first briefing session on finance and business in that country at the Savoy-Hilton hotel, New York City, Feb. 27-March 1.

* * *

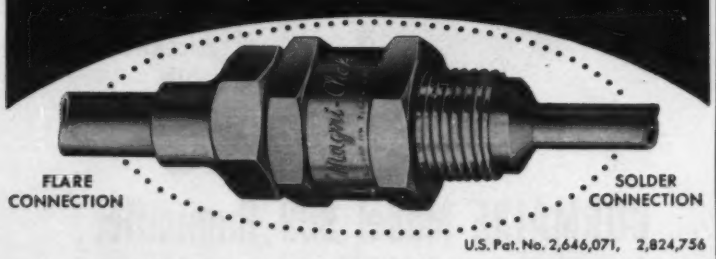


THIS 50 CYCLE "Conqueror" room air conditioner has been especially engineered by the York Div., Borg-Warner Corp. to operate on the wide voltage range found in the export market. A detailed description of the unit was published on page 43 of the Feb. 13 issue.

* * *

WELBILT CORP., Maspeth, N. Y., has concluded a licensing agreement for the manufacture of its air conditioning equipment with Koor Krafts & Industries, Ltd., Israel, which will also have exclusive sales rights in Israel.

MAGNI-CHEK VALVES with the T-S CONNECTION *REDUCES YOUR INVENTORY*



U.S. Pat. No. 2,646,071, 2,824,756

MAGNI-CHEK IS A NON-ELECTRIC MAGNETICALLY OPERATED CHECK VALVE, AND INCORPORATES OUR T-S (THREAD-SOLDER) CONNECTION WHICH PERMITS YOU TO FLARE OR SOLDER EITHER END OF THE VALVE TO THE LINE.

Magni-Chek incorporates no springs. A lifetime alnico magnet controls a floating disc which is drawn to a closed position when the pressure balances. Magni-Chek is so finely calibrated that a fraction of an ounce of pressure will open the passage permitting a smooth flow without the usual pressure drop. Available in 1/4", 3/8", 1/2" and 5/8".

NO BACK PRESSURE—NOT AFFECTED BY SOLDERING TEMPERATURES—MAY BE INSTALLED IN ANY POSITION

T-S CONNECTION

Basically the T-S connection is a standard male flare fitting with removable inserts for flare, solder or a combination of both. The inserts I. D. vary at each end permitting up to 16 different combinations each for installation of 3/8" and 1/4" valves and 9 combinations each with 1/2" and 5/8" valve.

For additional information see your wholesaler or write to department N-22

WATSCO INC.
1020 EAST 15th STREET, HIALEAH, FLORIDA

IN WORDS OF ONE SYLLABLE...

A man who pays to get a thing, as a rule, wants it.

Or needs it. Or both.

This is true for things men read—as well as things they eat or wear. Which is why we think it makes sense to look for the ABP sign in the books in which you plan to run your ads.

For the ABP sign in a book means it goes to men who *want* it. It is a sign they have paid to get it. And with some of them—a lot of them, in fact—it is a sign they *need* it.

When you pay for space to talk to men who can buy what you have to sell, it's a good thing to keep this in mind. For if they *want* the book in which you run your ad, there is a good chance they will see it and read it. And if they *need* the book in their jobs, the chance is more than just good. It's what we used to call a lead pipe cinch.

When you buy space to talk to men you want to sell, buy it in the books *they buy*—books that are proud to stand a plain old test of worth: cash. You can spot them through this sign:

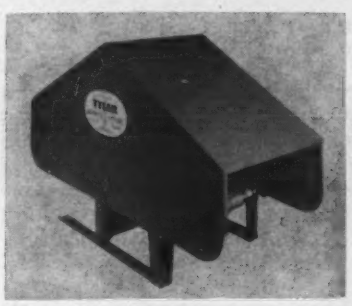
THE ASSOCIATED BUSINESS PUBLICATIONS ABP

The plus value of paid circulation is "wantedness"

AIR CONDITIONING, HEATING & REFRIGERATION NEWS
450 W. Fort St., Detroit 26, Mich.

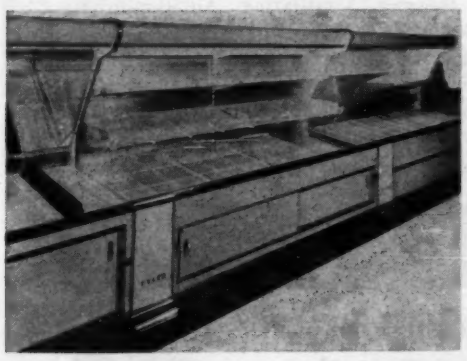
International Conference Sees New Tyler Equipment

DRAWING most attention during Tyler Refrigeration Corp.'s recent international sales conference was this Service Meat & Delicatessen case with top-mounted gravity coil, enclosed lighting, and full-view glass sides. Available with or without double-duty rear storage, the new case comes in 8 and 12-ft lengths; a full line of delicatessen accessories can be offered.

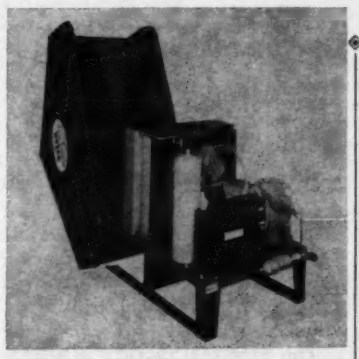


AN ALL-WEATHER shroud for use on outdoor condensing units drew lots of attention at the conference. The shroud pivots out of the way to allow easy access to the unit, yet protects from wind-blown rain and snow without grille or louver-effect to cut down air flow. Illustrated here is the shroud for the 3-hp condensing unit; shrouds are available for all sizes; they are painted Tyler's compressor green.

THE NEW MULTI-SHELF produce case, with double-duty front opening completes the line of multiple shelf fixtures—meat, produce, and dairy. The new case can also be obtained with a blank front (no access or storage).



A NEW LINE of partitions makes it possible to join almost any combination of cases in "infinite combination and layout. Such displays can carry the shopper's eyes from display to display by making good use of alternating vertical and horizontal areas as recommended in the Loewy report." Tyler has issued a bulletin "Volumatic Merchandising" which specifies the combinations which are possible.



SHROUD is open here showing Tyler 3-hp Super air-cooled condensing unit ready for servicing.

Operator of 3 Supermarkets Tells Why He Buys from Local Distributor

NEW ORLEANS — John Schwegmann, who operates three huge supermarkets here that collectively do a $53 million dollar annual volume, buys his refrigeration equipment from a local distributor.

Why?

Schwegmann, addressing the 14th annual convention of the National Commercial Refrigerator Sales Association, admitted that he could shave a few dollars off the price he pays by buying direct from the manufacturer.

"But I feel," he declared, "that we will be ahead to do business with a local distributor."

Paying tribute to United Refrigeration Inc. and to Vice President Mark Zeringue in particular, Schwegmann declared, "When they tell you something, they stand behind it. They know their business and perform service. Service is very important to us.

"Their servicemen don't change. We have had the same man on our equipment for 15 years. He knows our equipment."

Asserting that the equipment he buys must have quality, he expressed the belief that quality in refrigeration equipment has been going down during the past few years.

"There is a point below which you cannot go," he warned manufacturers. "To do the volume we do, equipment must have durability to stand up under heavy usage. When a woman decides she doesn't want a turkey she has picked up and drops it back into the case, I don't want the bottom to fall out."

Schwegmann urged the equipment distributors to figure out more ways to encourage independent grocers to get into the business. He felt that job belonged to the distributor because the independent grocer is his customer.

"Yes, there is money in the grocery business—or any other business—if you have the will to work. If you love your business and love to work, you will make more money than you know what to do with," he commented.

Schwegmann opined that more independents would get into the business if they could get more financing. He attacked interest rates on store financing as "exorbitant" and observed that "there must be some way to get simple interest rates."

Later in the convention, however, distributors expressed the opinion that simple interest rates were not the answer to this problem. The idea was suggested that distributors do more to explain to their customers why they must charge contract interest rather than simple interest rates.

Schaefer Names Omelianchuk

MINNEAPOLIS — Paul P. Omelianchuk has been named chief engineer and will head the engineering department for Schaefer, Inc., Minneapolis manufacturer of ice cream and frozen food cabinets, milk coolers, and dairy cases, according to R. B. Norris, vice president.

Omelianchuk

From 1947 through 1952, Omelianchuk was employed in the engineering department of the Deepfreeze Div., Motor Products Corp. He joined Schaefer in December of 1952 as product design engineer and later became assistant chief engineer. In November of 1959, he left Schaefer to go into the consulting business, returning later to take his present post.

Mohawk Appoints Charles Ringland

GLOVERSVILLE, N. Y.— The appointment of Charles Ringland as general sales manager of Mohawk Cabinet Co. has been announced by T. E. Hoye, Sr., president.

C. Ringland

Ringland was first employed by General Electric Co. After four years' service as a Naval jet pilot, Ringland joined Mohawk Cabinet's engineering department in December, 1958. Later he was appointed field salesman.

Cooper, Andrysiak Named by McCray

KENDALLVILLE, Ind. — J. W. Krall, president of McCray Refrigerator Co., Inc., has announced that the board of directors of the company at their meeting on Jan. 6 appointed Hugh E. Cooper vice president in charge of sales and Eugene J. Andrysiak vice president in charge of manufacturing.

E. J. Andrysiak

H. Cooper

Cooper had previously been general manager of sales and Andrysiak had been works manager.

The announcement by Krall was made at a dinner marking the conclusion of the annual meeting of the McCray district sales managers who had been at the plant for two days to hear and discuss 1961 plans for sales, advertising, engineering, service, and production.

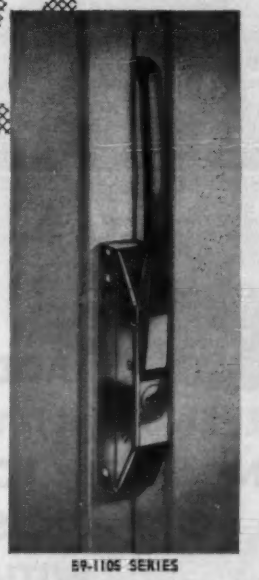
Honored guest at the dinner was Dr. Robert W. Candler of Atlanta, chairman of the board of directors of the company.

Alvin E. Schmidt Dies

CINCINNATI — Alvin E. Schmidt, 70, retired vice president of the C. Schmidt Co., manufacturer of commercial refrigeration equipment, died recently at his home. He was the grandson of Carl Schmidt, who founded the firm in 1870.

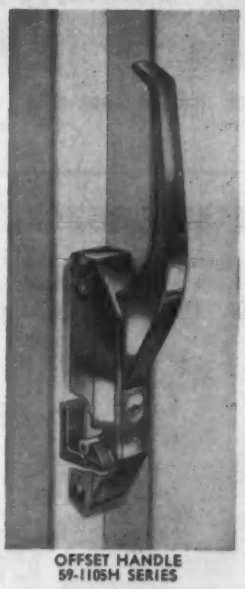
ENGINEERED SPECIFICALLY for commercial refrigerated applications

NATIONAL LOCK EDGE-MOUNTED LATCHES



59-1105 SERIES

Nylon roller bolt action assures easy, positive, quiet operation. Similar action in other latches proved in 20 years of field testing. Latch mounts on right or left hand doors. Available with or without key locking. Surface-mounted strike adjusts two ways. Write for information.



OFFSET HANDLE
59-1105H SERIES

NATIONAL LOCK
INDUSTRIAL HARDWARE DIVISION
NATIONAL LOCK COMPANY • ROCKFORD, ILLINOIS

International Division • 13 E. 40th St., New York, N.Y.
Cable Arlab

Hermetic Trends & Service Requirements (2)

*By John J. Floreth, Vice President and Director of Services, York Div., Borg-Warner Corp.**

SUMMARIZING the history and impact of hermetic compressors on the air conditioning and refrigeration industry, this series of articles goes on to discuss modern concepts of hermetic servicing.

From a study of these and other growth statistics, during the postwar years it is apparent that the commercial development of the hermetic compressor was one of the major factors which enabled the industry to enter the mass markets. Uninterrupted trouble-free operation, simplification of installation, ability to remove or replace a complete circuit rather than expensive field repair and servicing, and lower total product and installation cost were some of the factors that enabled hermetic systems to secure public acceptance in mass market quantities.

However, with our entry into these large volume markets it immediately became apparent that the installing and servicing obligation of the industry must be developed in the same proportions if we are to retain public acceptance.

As early as 1950 it began to be evident that a continuation of the basic replacement circuit plant would limit our growth and eventually strangle the necessary continuing research and development programs. For example, the rapid evolution in unitary equipment designs and the need for more flexibility in product design to meet consumer acceptance trends soon prevented the complete interchaneability of hermetic circuits.

As is normal in most industry growth and development, these problems were first encountered and assumed by the manufacturers. York and others embarked on a hermetic circuit repair program, and field repair of circuits was originally limited to a few carefully selected service organizations who were willing to pioneer this new type of service requirement under close factory supervision. As the volume increased the number of authorized repair agencies has been rapidly increased and our entire industry is still struggling to serve its growth potential in this manner.

This poses increasing problems such as obtaining skilled mechanics, constant training and supervision, proper tools, equipment and facilities, particularly at remote locations.

There is also the problem of tremendous inventories of complete circuits at both the manufacturer and distributor levels that are required to provide the prompt service that will continue to assure the public acceptance necessary to realize our full growth potential.

It is inconceivable to many of us, and yet an established fact, that our industry has penetrated 9 to 10% of its market potential.

With a product that is as useful, healthful, a necessity in certain processes, and generally as well made to give many more years of useful operation than the average automobile or other American mass product, our economists are still predicting only a 15% to 16% penetration of our potential by 1965.

When we compare this performance with the market penetration of other industries that compete for the American dollar beyond basic necessity levels, such as the automobile industry, television, home appliances, etc., it is obvious we must devise a better industry formula and approach to accomplish our goals.

Regardless of continually improving product designs, and even basic research break throughs in the form of thermoelectric heating and refrigeration, it is apparent that **no industry can accomplish its full growth potential without fully recognizing and solving the service obligation that makes any product completely acceptable to the consumer.**

Service must be an integral part of our growth formulae, but the service problem and its solution are no longer the sole responsibility of the manufacturer but must be fully recognized and assumed at all levels of distribution.

(To Be Continued)

*An edited version of a talk before Refrigeration & Air Conditioning Contractors Association.

Universal Electric Tennessee Plant Nears Completion

OWOSSO, Mich.—A new 60-acre branch manufacturing plant for The Universal Electric Co. here is nearing completion at Ripley, Tenn., Universal President George Hoddy announced recently.

The $750,000 facility is scheduled to go into operation in mid-February with full production by the end of March.

Operated independently, the Tennessee operations will provide Universal customers with the same delivery assurances they now have with two separate suppliers, Hoddy said.

The expansion in Tennessee came after the company had made a number of expansions in Owosso and had reached the limit for growth in that area, Hoddy reported. The Ripley location was selected for its proximity to Universal customers in the South and Southwest.

Universal executives are particularly proud of the financing of the new expansion for the Owosso-based firm. In announcing the new plant, Hoddy reported that the company is doing all its own financing.

The company manufactures electric motors from 1/600 to 1/3 hp for use in such equipment as pumps, appliances, refrigeration, heating, air conditioning, and ventilation equipment as well as providing for scientific instruments and defense work.

WHAT . . WHEN . . WHERE

— A Guide to Coming Events of Interest

National Association of Refrigerated Warehouses, Inc. and Refrigeration Research Foundation
March 27-30, Mark Hopkins hotel, San Francisco.

Gas Appliance Manufacturers Association
April 5-7, Boca Raton hotel, Boca Raton, Fla.

National Association of Electrical Distributors
April 29-May 3, Detroit.

12th Annual Appliance Technical Conference, American Institute of Electrical Engineers
May 1-3, Kentucky hotel, Louisville, Ky.

Industrial Heating Equipment Association, Inc.
May 21-24, The Homestead, Hot Springs, Va.

The Institute of Boiler & Radiator Manufacturers
Week of June 12, Seaview Country Club, Absecon, N. J.

American Society of Heating, Refrigerating & Air-Conditioning Engineers, Inc.
June 26-28, Denver.

International

2nd Heating, Air Conditioning, Refrigeration & Hydrosanitary Exhibition and Conference
March 1-7, SAEN Pavillon, Milan Fair, Milan, Italy.

Tenth Electrical Engineers (ASEE) Exhibition
March 21-25, Earls Court Exhibition Hall, London, Eng.

Second International Refrigeration & Air-Conditioning Exhibition and Technical Convention
April 11-14, Earls Court, London, England.

17th Congress for Heating, Ventilating, Air Conditioning
April 19-21, Hamburg, Germany.

Heating, Ventilating & Air Conditioning Exhibition (HEVAC)
Sept. 26-Oct. 6, Olympia, London, England.

International Factory Equipment Exhibition
Nov. 13-18, London, England.

MIGHTY MITE MOTOR PROTECTORS

ADD DEPENDABILITY AND SAFETY TO APPLIANCES WITH MIGHTY MITE

MECHANICAL INDUSTRIES PRODUCTION CO.
223 Ash Street — Akron, Ohio

CAPTURE **NEW** PROFITS!

Rebuild Accessible Hermetics Right In Your Own Shop

★ Only ONE easy to operate tool required.

★ Adapts to fit all semi-hermatic compressors.

★ Bearings reamed perfectly—No complicated dials and settings—No guess work.

★ Stock your own replacement bearings and parts.

NEVER BEFORE . . .

has the local shop been able to perform this costly and usually time-consuming operation. NOW you can ream compressor journal bearings right in your own shop with your present mechanics.

. . . Not only makes new profits for you, but eliminates the resultant delay and freight costs of returning compressors to factory for rebuilding.

Write today for full information.

Tesco inc — 1341 Jackson Ave., Memphis, Tennessee

SPECIAL DELIVERY BY ROCKET?

No. we aren't using the new ballistic missiles yet, but maybe some day. In the meantime, Harry Alter gives you the fastest possible service. Your orders are handled with *careful* speed. Complete inventories and streamlined methods assure truly snappy service.

We're Real Specialists in

REFRIGERATION • AIR CONDITIONING • ELECTRIC MOTORS

SUPPLIES and PARTS

SAVE MONEY, time and effort by ordering from our new *Dependabook*, the most complete catalog of all. 248 pages. Over 10,000 items carried in stock. *Wholesale only.* Your orders filled really fast by mail, or they can be picked up at one of our six big warehouses.

Write on your letterhead for the 1960-61 DEPENDABOOK...
Also our monthly Flyer of surplus and close-out Bargains.

THE HARRY ALTER CO., INC.

1717 S. Wabash Av.	134 Lafayette St.	2332 Irving Blvd.	695 Stewart Ave., S.W.
Chicago 16, Ill.	New York 13, N.Y.	Dallas 7, Texas	Atlanta 10, Ga.

FREE PARKING AND FAST COUNTER SERVICE AT THESE 4 BIG WAREHOUSES

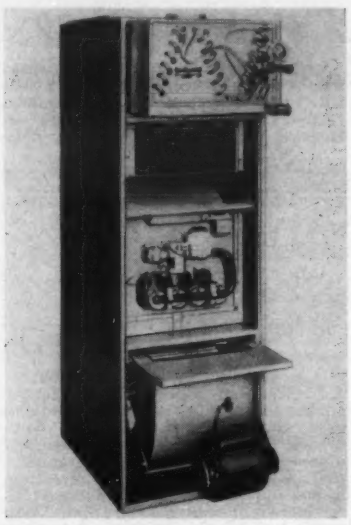
Handy Way to Subscribe

To See the Industry In Action EVERY WEEK

Keep up-to-date on what's going on in your industry. You'll see action weekly in AIR CONDITIONING, HEATING & REFRIGERATION NEWS. Covers latest news and gives you top how-to-do-it reports on residential, commercial, and industrial air conditioning, heating, and refrigeration for contractors, dealers, consulting engineers, distributors, servicemen, and manufacturers. Read the industry's only newspaper every week—you'll profit by it—only $6.00 per year, 53 issues (U.S. and Canada). Foreign: $10 per year.

AIR CONDITIONING, HEATING & REFRIGERATION NEWS
450 W. Fort St., Detroit 26, Mich. 2-20-61
Send the NEWS every week for: ☐ One Year $6. ☐ Three Years $12.
☐ Payment Enclosed ☐ Bill Me ☐ Bill Company

Name.....
Company.....
Street.....
City..... Zone..... State.....
IMPORTANT: Company's Type of Business.....



FRASER & JOHNSTON gas-fired furnace-evaporator coil combination.

Fraser & Johnston--

(Continued from Page 1, Col. 3)

less evaporator coils—as heating furnaces only. Since the casings are roomy to handle a large capacity of cooling, the slow blower operations, when used for heating only, makes available a furnace with ultra-quiet operation.

"The coil cabinets are integral to the furnace. And at any future time a coil may be inserted into the casing to add cooling to the system with no change required in the duct-work."

Sizes available were listed as follows:

Furnace	Heating Btu Input	Cooling-Nominal Tons
60CA2	60,000	2
80CA2	80,000	2
80CA3	80,000	3
100CA3	100,000	3
125CA3	125,000	3
100CA4	100,000	4
125CA4	125,000	4
150CA4	150,000	4
175CA4	175,000	4
125CA5	125,000	5
150CA5	150,000	5
175CA5	175,000	5
200CA5	200,000	5

Fraser & Johnston representatives were brought to the factory here for the week of Jan. 23 to acquaint them with new heating and air conditioning products.

The company's products include commercial heat pumps and self-contained air conditioning units through 15-ton capacities.

General Sales Manager E. A. Easton said all the manufacturer's representatives have represented F&J over 10 years, and one, George Zingsheim of Minneapolis, since 1935. Except for coast territory served by the F&J staff here, representatives cover the U. S.

The representatives saw F&J's large furnace plant, its own tool and die shop, research and testing laboratory, and air conditioning plant where refrigeration components are made.

New Orleans--

(Continued from Page 1, Col. 5)

Conditioning Contractors Inc. and the Master Refrigeration & Air Conditioning Association, both headed by Philip J. Thompson, and the Air Conditioning & Refrigeration Trades Association, headed by Ralph Tebbe.

The advertisements, appearing in New Orleans newspapers, also said: "We warn you to call the bureau (BBB) for a report before entrusting your room air conditioner or refrigerator to any repairman regardless of who recommends him."

It was this sentence the contractors objected to. They said this damaged all persons in the trades.

Judge Rainold took the case under advisement after hearing arguments and testimony that lasted for more than four hours.

The contractors, represented by attorney Adelaide Baudier, dropped their request for $250,000 in damages and continued in the case asking only the injunction.

Thompson Testifies For Contractors

Thompson was the first called to testify.

He said he did not want his work or that of other contractors to be judged by one man—James Barr, manager of the local BBB.

"If someone has a complaint against us," he said, "we want them to take us to court. We are willing to be tried by a judge or a jury, but not by one man who is not an expert."

Thompson also charged while on the stand that the BBB did not represent any state or government body and that the bureau had been established here without proper authorization. One man, he asserted, did not have the authorization to supervise all local businesses.

Barr Represents BBB

When Barr was called to testify, he said the BBB represented the efforts of many of the city's respected businessmen. Admitting he was no expert in air conditioning and refrigeration, he said he had employed persons who were to investigate mechanical complaints.

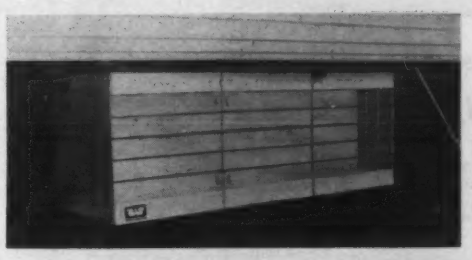
Barr reviewed complaints he said his office received. Some concerned poor mechanical work, he said, while others were aimed at prices charged by the contractors.

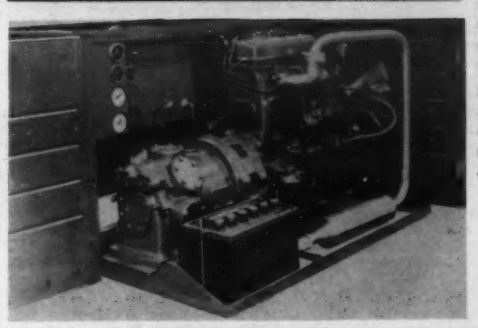
Worthington Enters Transport Refrigeration Field--

(Continued from Page 1, Col. 1)

in every climate condition during the past year, and was proven to maintain a precise temperature, regardless of outdoor conditions, at any level between -10°F to 75°. It automatically provides either refrigeration or heating as required, with automatic defrosting.

Recently, at McCormick Place Exhibition Hall here, transportation industry leaders witnessed the first public demonstration of the unit, following the transport of a $500,000 load of Revlon cosmetics which had been carried from New Brunswick, N. J., at a continued maintained temperature of 40° by Denver-Chicago Trucking Co., Inc., it was reported.





DIESEL - ENGINE - DRIVEN condensing unit is mounted under the trailer and includes all the power and refrigeration condensing equipment. It is enclosed in a new modern protective casing (top photo). The engine, compressor, fan, battery, and fuel system comprise a "power tray" mounted on slides for easy removal for service without disturbing the balance of the system (bottom photo).

Engineered for Long Hauls

Engineered to meet long-haul requirements, the new model TDU-800, is a two-unit system consisting of a diesel-engine-driven condenser unit and an evaporator unit. Inherently, the design provides the light weight required for highway operation and shock and vibration resistance required for railroad "piggyback" operations, Johnson said.

"The temperature of the load as well as the control setting are clearly indicated on a large, easy-to-read dial," it was stated. "Pilot lights are furnished on the control to indicate normal operation and type of cycle heat-cooling-defrost.

"The evaporator unit is of vertical air-flow design consisting of the coil arranged for heating or cooling, fans and motors, and drain pan. It is designed for floor mounting with the unit weight carred on the floor and arranged to be used with a full protective bulkhead. This unit weighs 350 lbs, is 56 in. wide, 13 in. deep, and 83½ in. high.

"All components are arranged to provide a low center of gravity and eliminate the necessity for special trailer reinforcement to carry the unit weight.

"Two fans are provided with separate motors, providing higher volume under all operating conditions, either heating or cooling. These fans operate at a constant speed under all operating cycles, providing continuous uniform air circulation within the trailer.

"The evaporator coil has extremely wide fin spacing and high internal volume permitting frost accumulation on frozen loads without impairing air flow and assuring minimum dehydration of meat and fresh commodities. A special thermal expansion valve and heat exchanger arrangement is used, providing full utilization of the coil surface under all operating conditions.

Automatic Defrost Controls Provided

"Automatic defrost controls are provided, defrosting the system only when required. When the air pressure drop across the coil builds up to a specified point, a static pressure switch will stop the fans and place the system into the heating cycle. Hot gas is then pumped through the evaporator coil until all the frost is melted and drained into the drain pan. The defrost cycle is terminated by means of a thermostat located at the outlet of the coil."

The major components in the condensing unit include the diesel engine, ned aluminum compressor, condenser, radiator, battery, condenser fan, muffler, and safety controls. This unit weighs 1,050 lbs, is 29 in. high, 75½ in. long, and 32¾ in. deep.

The engine and compressor are mounted in a "power tray" on slides permitting fast removal when maintenance is required without disturbing the engine fuel system of balance of the refrigeration system.

Driven By Mercedes-Benz Diesel Engine

"The new aluminum 5-cylinder 7½-ton compressor especially designed by Worthington weighs only 92 lbs and is direct driven by a Mercedes-Benz diesel engine," it was noted. "A new coupling providing cushioned power transmission eliminates the vibrations caused by torque fluctuations between the engine and compressor.

"The condenser coil, oversized to assure adequate condensing capacity at high temperatures, is completely protected from road splash, ice, and snow.

"Complete safety controls are included to protect the system from inadvertent damage caused by abnormal operating conditions.

"The condensing unit is fully protected at all vital areas from road hazards and is mounted by four equally loaded rubber mounts providing protection from shock, vibration, and structural flexing."

McQuay Names Hunt--

(Continued from Page 1, Col. 3)

making equipment. Construction of the new plant will begin immediately, James said.

The Visalia plant is the third for McQuay. Others are located at Faribault, Minn., and at Grenada, Miss. General offices are in Minneapolis.

Hunt has spent 30 years in various phases of manufacturing in supervisory capacities. In 1952, he joined Drayer-Hanson as plant manager, becoming general manager and later vice president and general manager for industrial products.

WITT REMOTE AIR COOLED CONDENSERS

With The Low Silhouette

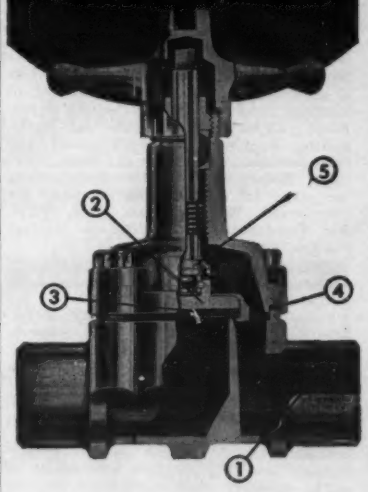
Efficiency, economy, dependability—those three words most effectively describe the operation of Witt Air Cooled Condensers. Available in a wide range of centrifugal blower and fan type models, for single or multiple compressor installations, for indoor or outdoor applications, you'll find a Witt Air Cooled Condenser to handle any size air conditioning or refrigeration system. Winter control systems available for low temperature areas—multiple circuiting available at no additional charge.

Write For Complete Witt Catalog

A. H. WITT COMPANY, INC.
940 N. Sycamore Ave., Los Angeles 38, Calif.

● FULL FLOW
✱ SELF ADJUSTING
● POSITIVE SHUT-OFF
✱ LEAK-LOK BONNET SEAL
● REPACKS IN USE
✱ TEMPERATURE PROOF

KEROTEST PACKED GLOBE VALVES



"Packed" with quality and of rugged brass construction, these valves are ideal for refrigeration and air conditioning systems, oxygen (degreased), nitrogen, compressed air and liquified petroleum gases. Features: 1. Designed for full flow. 2. Floating disc for self-adjustment. 3. Quick seating disc for ease of operation. 4. Leak-proof with exclusive gasketing. 5. Repacks under pressure with positive back seating. Maximum operating pressure 500 p.s.i.—maximum temperature 200° F. See your Kerotest wholesaler.

R12 Series ⅞"-2⅛" Forged Brass
R10 Series 2⅛"-4⅛" Cast Brass

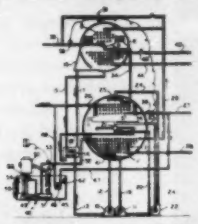
KEROTEST

KEROTEST MANUFACTURING CO.
2502 Liberty Avenue
Pittsburgh 22, Pa.

PATENTS

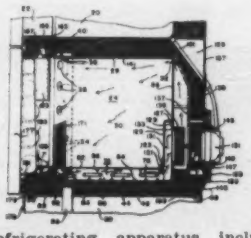
Week of Nov. 15
(Concluded)

2,959,935. PURGING ARRANGEMENT FOR ABSORPTION REFRIGERATION SYSTEMS. Louis H. Leonard, Jr., East Syracuse, N. Y., assignor to Carrier Corp., Syracuse, N. Y.



1. In a purging arrangement for an absorption refrigeration system, the combination of a container, a pump for circulating solution in the container, an ejector connected to the pump, a line connecting the ejector with the absorber of the system, whereby discharge of solution through the ejector by said pump induces non-condensable gases from the absorber and forwards the non-condensable gases to the container for discharge to ambient atmosphere. . . .

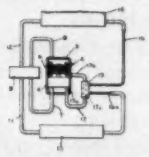
2,959,936. REFRIGERATING APPARATUS. Leonard J. Mann and Edward C. Simmons, Dayton, Ohio, assignors to General Motors Corp., Detroit, Mich.



1. Refrigerating apparatus including tubular evaporating means in the form of tubing located generally between two parallel horizontal planes provided with spaced parallel upright elongated fins in heat exchange relation thereto each substantially transverse to said planes and having their long edges substantially parallel to said planes, a removable heat transfer member having extensive horizontal areas in contact with the long edges of said fins in one of said planes. . . .

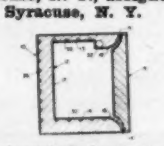
2,959,937. REFRIGERATION SYSTEM FOR AIR CONDITIONING UNITS. Gerard G. Coyne, Louisville, Ky., assignor to General Electric Co., a corporation of New York.

1. A refrigeration system for an air conditioning unit comprising a motor-compressor unit and a pair of heat exchangers connected in refrigerant flow relationship, expansion means connected between said heat exchangers for expanding refrigerant from condenser pressure to evaporator pressure, a hermetically sealed casing housing said motor-compressor unit and adapted to contain high pressure refrigerant gas, and superheat removal means communicating with the discharge outlet of said compressor for



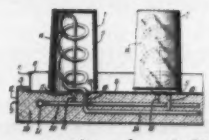
receiving high pressure refrigerant gas therefrom, said superheat removal means having an outlet connecting with said casing for discharging cooled gas into said hermetic casing for cooling said motor, said superheat removal means and said expansion means being arranged in heat transfer relationship so that said expansion means cools said high pressure gas in said superheat removal means prior to discharge of said gas into said casing. . . .

2,959,939. REFRIGERATED STORAGE UNIT. William A. Arzberger, North Syracuse, N. Y., assignor to Carrier Corp., Syracuse, N. Y.



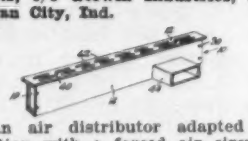
In a refrigerated food storage unit including an outer upright shell member, an inner shell member having a configuration substantially complementary to said outer shell and including a top wall, means connecting the inner shell with the outer shell to form an insulation accommodating space between said shells, access means serving as a front wall to define, with the inner surfaces of the inner shell walls an enclosure, a refrigeration system. . . .

2,959,940. APPARATUS FOR INDIVIDUAL REFRIGERATION OF GLASS VESSELS. Frederick W. McDonald, Elmhurst, Ill., assignor to A & W Products Inc., Santa Monica, Calif.



1. An apparatus for individually frosting the exterior of a plurality of open mouth vessels such as beverage glasses or the like, comprising in combination, mechanical refrigeration means including an insulation-filled base structure having a non-refrigerated upper surface thereon, said means also including a plurality of coolant conducting tubes projecting therefrom, tubing means supported within the insulation in said base for supplying said tubes with refrigerant. . . .

2,960,021. AIR DISTRIBUTOR. Louis C. Cotta, c/o Gerwin Industries, Inc., Michigan City, Ind.



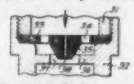
1. An air distributor adapted for connection with a forced air circulating system, comprising an elongated casing having top, side, bottom and end walls, a longitudinal partition spanning said casing and dividing it into upper and lower chambers, said casing having an inlet opening extending part length thereof for communication with said system at said lower chamber, a plurality of apertures substantially uniformly longitudinally spaced in said partition throughout its length. . . .

2,960,022. HEAT DIFFUSER, HUMIDIFIER, AND DRAFT ELIMINATOR. Edward P. Dorsey, 308 Branford St., Hartford, Conn.

In a heat diffuser, humidifiers and draft eliminator, an upright body member provided with a series of corrugations, said body member being of a size to extend substantially across

the full width and height of a hot air outlet, a plurality of struck-out portions on said body member defining air outlet openings, said struck-out portions extending in different directions with respect to each other. . . .

2,960,109. FLOW REGULATOR. Keith E. Wilson, Burbank, Calif., assignor to General Controls Co., Glendale, Calif.



1. In a flow regulator: a first casing part having a through bore enlarged at one end to form a shoulder intermediate the length of said first casing part; a circular member of flexible resilient material fitted in said one casing part with its marginal portion against said shoulder; said member having flow openings located noncentrally thereof; a second casing part having one end threadedly receivable in the said one end of said first casing part and frictionally clamping the marginal portion of said member against said shoulder. . . .

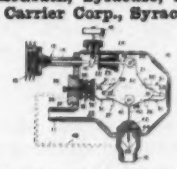
2,960,110. NOISE DAMPENER. Floyd S. Levison, 833 Pinewood Terrace, Falls Church, Va.

1. A noise dampening device for a fluid system which comprises a first continuous fluid conveying tube having an inlet for fluid and a second continuous conveying tube having an outlet for fluid, said conveying tubes being interlocked with said inlet and outlet disposed in aligned and opposed relationship, a plurality of helical tubes of smaller diameter than said conveying tubes, each of said helical tubes having one end connected to the first conveying tube and its other end connected to the second conveying tube positioning said conveying tubes in general telescoping relation and permitting relative longitudinal movement therebetween. . . .

2,960,114. INNERFINNED HEAT TRANSFER TUBES. James Nelson Hinde, Highland Park, Ill., assignor to Bell & Gossett Co., a corporation of Illinois.

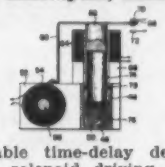
1. In a heat exchange tube of the innerfin type, an elongated core having a central member and a plurality of integral radially projecting fins extending longitudinally thereof, and an elongated tube surrounding said core and depressed inwardly between said fins to form external flutes throughout the length of said fins under resilient tension acting to hold said core in position in said tube and yieldingly hold said tube in heat conducting relation to said fins. . . .

2,960,269. VALVE STRUCTURE. William L. McGrath, Syracuse, N. Y., assignor to Carrier Corp., Syracuse, N. Y.



1. In an automatic changeover valve adapted for use with an air conditioning system, a housing having an inlet port and an outlet port, a valve plug movable with respect to one of said ports to meter the amount of fluid which may pass through said valve, a slidable first member having an elongated wide central cutout portion extending along an axis thereof and terminating in a relatively narrow axially aligned slot at each end. . . .

2,960,638. TIME-DELAY DEVICES. Edgar H. Petrie, Levittown, Pa., assignor to Minneapolis-Honeywell Regulator Co., Minneapolis, Minn.



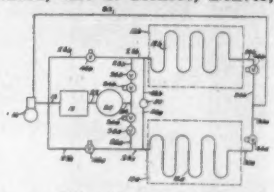
A variable time-delay device comprising a solenoid driving means including a movable core member and and electrical field-coil, means for applying an energizing signal to said field-coil for imparting motion to said movable core member, switch means coupled to said core member for actuation thereby, viscous fluid damping means for retarding the motion of said core member. . . .

Editor's Note: Patents described here have been selected from the "Official Gazette" of the United States Patent Office. They offer only a brief summary of each invention. In some instances only the first part of the digest is presented.

Printed copies of patents, reissued patents, and patent designs may be secured from the Patent Office; patents and reissues are 25¢ each, while designs are furnished at 10¢ each. Address orders to: Commissioner of Patents, Washington 25, D. C.

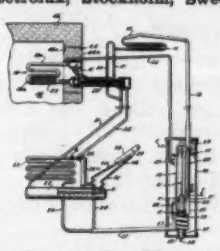
Week of Nov. 22

2,960,340. METHOD AND APPARATUS FOR DEFROSTING A REFRIGERATION SYSTEM. Fred J. Hosken, 1015 Filmore St., and Edward J. Hosken, 1150 S. Glencoe, Denver, Colo.



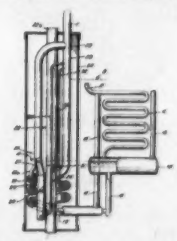
1. A defrosting apparatus for use with a plurality of evaporators in a refrigeration system including a source of refrigerant connected to supply either hot gas or cold refrigerant to each evaporator of the system comprising means for isolating a selected evaporator in the system from the supply of cold refrigerant for defrosting, means for introducing the hot gaseous refrigerant under pressure into each isolated evaporator for defrosting same. . . .

2,960,341. ABSORPTION REFRIGERATION DEFROSTING ARRANGEMENT. Wilhelm Georg Kogel, Stockholm, Sweden, assignor to Aktiebolaget Electrolux, Stockholm, Sweden.



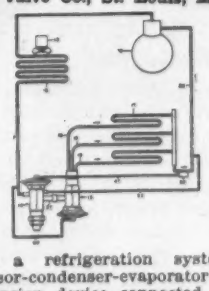
1. In the art of refrigeration with an absorption refrigerating system including vaporizing refrigerant in the presence of an inert gas at a place of evaporation to produce a refrigerating effect, circulating the inert gas through and between the place of evaporation and a place of absorption, flowing absorption liquid rich in refrigerant in a path from the place of absorption to a place of vapor expulsion and flowing absorption liquid weak in refrigerant in a path from the place of vapor expulsion to the place of absorption. . . .

2,960,342. ABSORPTION REFRIGERATION. Wilhelm Georg Kogel, Stockholm, Sweden, assignor to Aktiebolaget Electrolux, Stockholm, Sweden.



1. In the art of refrigeration with a system in which absorption solution is normally circulated in its circuit through and between a place of vapor expulsion and a place of absorption, the improvement which comprises the steps of diverting absorption solution from its path of flow in which solution normally flows from the place of vapor expulsion to the place of absorption, raising the diverted solution from one level to a higher level by vapor-liquid lift action at the place of vapor expulsion, mixing such raised diverted solution with absorption solution at the place of vapor expulsion from which vapor has been expelled. . . .

2,960,345. REFRIGERANT CONTROL FOR SYSTEMS WITH VARIABLE HEAD PRESSURE. Harold T. Lange, Huntleigh Village, Mo., assignor to Sporlan Valve Co., St. Louis, Mo.



1. In a refrigeration system of compressor-condenser-evaporator type, an expansion device connected in the refrigerant line between the condenser and evaporator, said expansion device including a valve means for controlling flow therethrough, a distributing device connected in the refrigerant line between the expansion device and evaporator, said distributing device including a variable nozzle controlling flow therethrough, the flow being through the expansion device valve means and the distributing device nozzle. . . .

(To Be Continued)

CLASSIFIED ADVERTISING

RATES for "Positions Wanted" $7.50 per insertion. Limit 50 words. 15¢ per word over 50.

RATES for all other classifications $10.00 per insertion. Limit 50 words. 20¢ per word over 50.

ADVERTISEMENTS set in usual classified style. Box addresses count as five words, other address by actual word count. Please send payment with order.

POSITIONS WANTED

EXPERIENCED SALES engineer with rare technical background. Specialized in market fixtures and air conditioning equipment. Vast knowledge of refrigeration, successful sales record, administrative detailing. Recently closed out own business. Located in North Carolina. Will relocate. Interested in factory representative position with commercial refrigeration or air conditioning manufacturer. BOX A6723, Air Conditioning, Heating & Refrigeration News.

30 YEAR old salesman desires to join a modern, aggressive manufacturer of heating and air conditioning equipment. Experience includes six years' selling heating, air conditioning and refrigeration products in New England. Manager of dealer development for large air conditioning company for two years. Will relocate. BOX A6724, Air Conditioning, Heating & Refrigeration News.

POSITIONS AVAILABLE

SALES ENGINEER to travel for wholesale distributing company, Boise, Idaho area. Must have had experience in selling and wholesale business. Salary and commission. All replies confidential. COMMERCIAL DISTRIBUTING COMPANY, 25 South 3rd. West, Salt Lake City 1, Utah.

SALESMAN WANTED by air conditioning and refrigeration wholesaler of parts supplies and equipment to call on established customers. Excellent opportunity for experienced man with good references. Salary and bonus arrangement. Write or apply DAVEY SALES COMPANY, 468 E. Market Street, P. O. Box 449, Akron 9, Ohio.

EXPERIENCED AIR conditioning and heating sales engineer to sell full line of York products to established dealers and contractors. Contact Mr. Bill Laut, SAGINAW DISTRIBUTORS, INC., 1761 East Genesee, Saginaw, Michigan.

WHOLESALE REFRIGERATION supply salesman for Northeastern Michigan area. Represent established quality lines. Contact Mr. Bill Laut, SAGINAW DISTRIBUTORS, INC., 1761 East Genesee, Saginaw, Michigan.

SERVICE & installation department manager familiar with Carrier & Chrysler air conditioning & heating, & paper work & personnel management that goes with a management position. Give complete details to Joel A. Wier, President, WHITE & WIER, Box 1683, Athens, Georgia.

FIELD SERVICE engineer — Midwest manufacturer wants man fully experienced in application and service of residential air conditioners. Be able to perform heat gain surveys, ductwork sizing, and layouts. Engineering background important. Minimum of five years' experience as field service supervisor. Extensive travel required. Send resume with snapshot. State starting salary requirements. Replies confidential. Write BOX A6720, Air Conditioning, Heating & Refrigeration News.

EQUIPMENT WANTED

CASH FOR Tecumseh compressors S 7R16, S 7N16, JE 300, FB 500, and other models. Advise B/M, electrical accessories, quantity, price. BOX A6722, Air Conditioning, Heating & Refrigeration News.

EQUIPMENT FOR SALE

BRAND NEW icemaker pump motor and impeller repair kits for Scotsman Carrier $18.00 at Kesco wholesalers coast to coast. Bronze replacement icemaker pumps for York Carrier $29.95. Hose connection adaptors for York Carrier $1.00. Complete line condensate pumps from 10' to 50' head. 115-208-230 volts. Catalog. KESCO, Jamaica 13, N. Y.

ATTENTION REFRIGERATION Servicemen. Send for catalog listing values in refrigeration and air conditioning parts, relays, capacitors, compressors. Savings up to 50%. WALTER W. STARR, 2833 Lincoln Ave., Chicago 13, Illinois.

DOUBLE DOOR meters 400 international delinquent type. $5.00 each in lots of 100. $6.00 in lots of 10. $7.50 in single units. WATERS EQUIPMENT COMPANY, INC., P. O. Box 15157, Tampa 3, Florida.

TOOLS, DIES, molds and fixtures to manufacture complete line of room air conditioners in ¾, 1, 1½ and 2 h.p. for sale at fraction of original cost. Including engineering and technical data, blueprints for all purchase and manufactured parts, time studies, etc. BOX A6711, Air Conditioning, Heating & Refrigeration News.

BUSINESS OPPORTUNITIES

FOR SALE — one man refrigeration service business, commercial grocery stores, etc. Established eleven years. Retiring. Price includes large home, furniture, shop, equipment, tools, supplies. Best climate in Florida. No working restrictions. Nets over $7,000. Total price $13,500, approximately $7,000 cash. P. W. POWERS, 9th Street, Vero Beach, Florida.

SEEKING AGGRESSIVE agents as manufacturers' representatives. Territories in Midwest, South ready for immediate development. Agents should be calling on air conditioning, heating distributors. In replying please describe territory, other lines handled. Our products form complete line of air conditioning chemical maintenance. WORTH CHEMICAL PRODUCTS COMPANY, Box 366, Fort Worth, Texas.

MISCELLANEOUS

ATTENTION—SERVICEMEN. Get the most complete catalog of Chicago replacement valve plates and shaft seals. Write or phone for catalog 809 and name of your nearest wholesaler. CHICAGO VALVE PLATE & SEAL COMPANY, 6960 W. Grand Avenue, Chicago 35, Illinois, Phone MErrimac 7-5666.

Split Systems—Residential & Commercial

Split Systems—Condensing Units

Addison (Private Brand)—Addison Products Co., Addison, Mich.

Model No.	Cabinet Dimensions (In.) Height	Width	Depth	Nominal Rating (B.t.u.h.)	Kw. Input Total	Net Weight	Condenser Face Area (Sq. Ft.)	Rows Deep	C.f.m.	Air Discharge	Compressor Make	Hp.	Comp. Mfrs. Model No.
*24AC-A	21½	30¼	27½	23,000†	3.0	265	3.6	2	1,750	Side	Tecumseh	2	B21U18
*35AC-A	23½	30¼	27½	33,000†	4.4	285	4.1	3	1,900	Side	Tecumseh	3	JE300
*47AC-A	26¼	48⅜	31½	45,000†	6.1	420	7.7	2	3,600	Side	Tecumseh	4	PFB400
*60AC-A	26¼	48⅜	31½	56,000†	7.4	455	7.7	3	4,200	Side	Tecumseh	5	FB500
90AC-A	50½	40	101	84,000†	10.8	1,150	15.1	3	7,200	Top	Copeland	7½	MR50-760
120AC-A	50½	40	101	112,000†	12.8	1,300	21.5	3	10,000	Top	Copeland	10	9R3-1080

†Rated under ARI standard.

AFC Comfortmaker—American Furnace Co., 1300 Hampton Ave., St. Louis 10, Mo.

Model No.	Cabinet Dimensions (In.) Height	Width	Depth	Nominal Rating (B.t.u.h.)	Kw. Input Total	Net Weight	Condenser Face Area (Sq. Ft.)	Rows Deep	C.f.m.	Air Discharge	Compressor Make	Hp.	Comp. Mfrs. Model No.
2A1	24½	26⅝	27½	24,000	2.55	247	4.5	3	2,000	Top	Tecumseh	2	[illegible]
A30-1	29	26⅝	27½	33,000	3.67	285	5.86	3	2,300	Top	Tecumseh	3	[illegible]
3A	27⅝	32½	32½	37,500	3.835	355	7.5	3	3,200	Top	Tecumseh	3	[illegible]
3A-3	27⅝	32½	32½	37,500	3.975	359	7.5	3	3,200	Top	Tecumseh	3	JE300
4A	34⅝	32½	32½	51,000	5.23	483	10.3	3	3,600	Top	Tecumseh	4	PFB400
4A-3	34⅝	32½	32½	51,000	5.12	475	10.3	3	3,600	Top	Tecumseh	4	PFB400
5A, A-3	34⅝	37	37	68,500	6.6/6.84	553/536	10.0	3	4,200	Top	Tecumseh	5	PFB500
85A, A-3	40	41⅝	41⅝	91,000	10.3/9.82	792/790	11.25	4	5,600	Top	Tecumseh	5.5/2	PFB500, JB200
120A, A-3	34⅝	37	37	133,000	13.2/13.08	1160/1080	20.0	6	8,400	Top	Tecumseh	(2) 5	PFB500

AirEase—The Johnson Furnace Co., 2129 W. 117th St., Cleveland, Ohio

Model No.	Cabinet Dimensions (In.) Height	Width	Depth	Nominal Rating (B.t.u.h.)	Kw. Input Total	Net Weight	Condenser Face Area (Sq. Ft.)	Rows Deep	C.f.m.	Air Discharge	Compressor Make	Hp.	Comp. Mfrs. Model No.
*24AC	23⅞	30¼	27½	22,000†	3.0	205	3.6	2	1,750	Side	Tecumseh	2	B21U18
*35AC	26¼	30¼	27½	33,000†	4.5	265	4.1	3	1,900	Side	Tecumseh	3	JE300
*47AC	28⅝	48⅜	31½	45,000†	6.1	445	7.7	2	3,600	Side	Tecumseh	4	PFB400
*60AC	28⅝	48⅜	31½	56,000†	7.4	455	7.7	3	4,200	Side	Tecumseh	5	FB500

†Rated under ARI standard.

Airtemp—Airtemp, Div. Chrysler [illegible] Box 1037, Dayton 1, Ohio

Model No.	Cabinet Dimensions (In.) Height	Width	Depth	Nominal Rating (B.t.u.h.)	Kw. Input Total	Net Weight	Condenser Face Area (Sq. Ft.)	Rows Deep	C.f.m.	Air Discharge	Compressor Make	Hp.	Comp. Mfrs. Model No.
1201-2	23⅞	[illegible]	[illegible]	[illegible]	2.59/2.65	337	4.43	3	1,600	Side	[illegible]	[illegible]	B21T18
1203-05	25½	[illegible]	[illegible]	30,000†	3.32/3.40	335	6.9	2	2,770	Top	[illegible]	5	3003-4
1203-3	23⅞	[illegible]	[illegible]	29-33,000†	2.96/4.32	370	5.62	3	3,250	Top	[illegible]	3	3003-3
1203-04	28¼	[illegible]	27½	29-33,000†	2.96/4.32	390	7.7	3	3,770	Top	[illegible]	3	JE300
1204-00	35⅛	32½	39½	32-36,000†	4.8/4.84	545	7.7	3	3,770	Top	Airtemp	3	3003-3
1205-02	38⅛	32	45⅝	48-49,000†	5.45/5.53	454	12.7	3	5,600	Top	Airtemp	4	[illegible]
1205-1	32⅜	[illegible]	51½	†	†	845	9.1	3	3,770	Side	Airtemp	5	[illegible]
1206-00	38⅛	32	45⅝	†	†	455	14.1	3	5,600	Top	Airtemp	5	[illegible]
1206-01	38⅛	32	45	†	†	455	14.1	3	5,600	Top	Airtemp	5	[illegible]
1208	63	58	28	†	†	1,100	[illegible]	3	6,000	Side	Airtemp	7½	[illegible]

†Rated under ARI standard. 144,000 B.t.u.h.—5.45 kw., 49,000 B.t.u.h.—[illegible] kw., 56,000 B.t.u.h.—5.93 kw., 56,000 B.t.u.h.—5.95kw, 147,000 B.t.u.h.—[illegible] kw., 55,000 B.t.u.h.—6.60 kw., 56,000 B.t.u.h.—6.88 kw., 63,000 B.t.u.h.—7.55 kw. 150,000 B.t.u.h.—6.45 kw., 61,000 B.t.u.h.—6.83 kw., 62,000 B.t.u.h.—6.93 kw., 64,000 B.t.u.h.—7.03 kw., [illegible],000 B.t.u.h.—[illegible] kw., 89,000 B.t.u.h.—8.96 kw., 89,000 B.t.u.h.—9.10 kw., 83,000 B.t.u.h.—9.06 kw. **For capacity of evaporator coil [illegible] refer to manufacturers specification sheets.

Amana—Amana Refrigeration, Inc., Amana, Iowa

Model No.	Cabinet Dimensions (In.) Height	Width	Depth	Nominal Rating (B.t.u.h.)	Kw. Input Total	Net Weight	Condenser Face Area (Sq. Ft.)	Rows Deep	C.f.m.	Air Discharge	Compressor Make	Hp.	Comp. Mfrs. Model No.
*HR224-1	21¼	30	31	24,000†	3.15	248	2.65	4	2,000	Side	Tecumseh	2	B21U18
*HR336-1-3	25½	33⅞	34	36,000†	4.83	343	3.59	5	2,700	Side	Tecumseh	3	PJE300
*HR448-1-3	31	40	44	48,000†	6.22	589	5.00	5	3,600	Side	Tecumseh	4	PFB400
*HR560-1-3	31½	40	45	60,000†	8.23	616	6.25	6	4,500	Side	Tecumseh	5	PFB500
[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]
[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]
[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]

†Rated under ARI standard. Note: LA coils are with cabinet for [illegible] air flow, [illegible] or counter flow. LU coils are with cabinet for horizontal air flow.

American Standard—American-Standard Air Conditioning Div., 40 W. 40th St., New York 18, N. Y.

Model No.	Cabinet Dimensions (In.) Height	Width	Depth	Nominal Rating (B.t.u.h.)	Kw. Input Total	Net Weight	Condenser Face Area (Sq. Ft.)	Rows Deep	C.f.m.	Air Discharge	Compressor Make	Hp.	Comp. Mfrs. Model No.
*AC-3A	23⅞	30¼	27½	23,000†	[illegible]	260	3.6	2	1,750	Side	[illegible]	2	B21T18
*AC-3B	23⅞	30¼	27½	32,800†	[illegible]	260	3.6	3	1,700	Side	[illegible]	3	PJE300
*AC-4B	28⅞	48⅝	31½	48,500†	[illegible]	445	7.8	3	4,000	Side	[illegible]	4	PFB400
*AC-5B	28⅞	48⅝	31½	[illegible]	7.15	455	7.8	3	4,000	Side	[illegible]	5	FB500
[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]
[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]
[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]

†Rated under ASRE conditions. ‡Also available in horizontal and down [illegible] available in horizontal.

Armstrong—Armstrong Furnace Co., 851 West Third Ave., Columbus 12, Ohio

Model No.	Cabinet Dimensions (In.) Height	Width	Depth	Nominal Rating (B.t.u.h.)	Kw. Input Total	Net Weight	Condenser Face Area (Sq. Ft.)	Rows Deep	C.f.m.	Air Discharge	Compressor Make	Hp.	Comp. Mfrs. Model No.
41-31	25½	27	30	23,000	2.7[illegible]	[illegible]66	[illegible]	3	1,500	Side	[illegible]	2	H-[illegible]
42-31-33	28	33½	34½	[illegible]	[illegible]	301	5.5	3	[illegible]	Side	Tecumseh	3	JE[illegible]
42-51-53	28	57⅜	34½	[illegible]	[illegible]	575	5.35	3	[illegible]	Side	Tecumseh	5	FB-5[illegible]
[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]
[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]
[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]

Atlas-Western—Tuck-Aire Furnace Co., 2045 Evans Ave., San Francisco [illegible]

Model No.	Cabinet Dimensions (In.) Height	Width	Depth	Nominal Rating (B.t.u.h.)	Kw. Input Total	Net Weight	Condenser Face Area (Sq. Ft.)	Rows Deep	C.f.m.	Air Discharge	Compressor Make	Hp.	Comp. Mfrs. Model No.
21RCS	29⅞	23½	29⅞	22,850	3.00	275	4.05	2	[illegible]	Side	Tecumseh	2	B21U18
23RCS	29⅞	32½	29⅞	21,500	2.90	270	4.05	2	2,450	Side	[illegible]	3	H-490-TA-3
31-33RCS-1	29⅞	32½	29⅞	32,300	3.85	315	[illegible]	3	2,450	Side	[illegible]	3	JE-300
31-33RCD-1	28	43	27½	34,850	4.13	400	[illegible]	4	2,400	Side	[illegible]	3	JE-300
31-33RCD-2	28	43	27½	37,500	[illegible]	[illegible]	[illegible]	4	3,600	Top	Tecumseh	3	PJE-300
41-43RCD	33½	50	34½	46,800	[illegible]	[illegible]	5.85	4	3,600	Top	Tecumseh	4	PFB-400
61-63RCD	33½	64½	37½	61,500	[illegible]	[illegible]	9.10	3	[illegible]	Top	York	6¼	SA-482
83RCD-1	33½	64½	37½	82,000	[illegible]	900	13.3	3	[illegible]	Side	York	8¾	TA-582

Bar-Brook—Bar Brook Mfg. Co., Inc., 6[illegible] Linwood Ave., Shreveport, La.

Model No.	Cabinet Dimensions (In.) Height	Width	Depth	Nominal Rating (B.t.u.h.)	Kw. Input Total	Net Weight	Condenser Face Area (Sq. Ft.)	Rows Deep	C.f.m.	Air Discharge	Compressor Make	Hp.	Comp. Mfrs. Model No.
AC311T	31½	37	33½	37,500	4.0	400	5.85	4	4,500	Side	Tecumseh	3	[illegible]
AC311-B	31½	37	33½	36,000	4.2	435	5.85	4	4,500	Side	Bendix-W.	3	[illegible]
AC511T	31½	37	33½	66,500	7.0	480	8.83	4	4,500	Side	Tecumseh	[illegible]	[illegible]
AC531-B	31½	37	33½	60,000	6.9	500	8.83	4	4,500	Side	Bendix-W.	[illegible]	[illegible]TA-3

Bard—Bard Mfg. Co., Bryan, Ohio

Model No.	Cabinet Dimensions (In.) Height	Width	Depth	Nominal Rating (B.t.u.h.)	Kw. Input Total	Net Weight	Condenser Face Area (Sq. Ft.)	Rows Deep	C.f.m.	Air Discharge	Compressor Make	Hp.	Comp. Mfrs. Model No.
*24AC	23⅞	30¼	27½	24,000	3.0	205	3.6	2	1,750	Side	Tecumseh	2	[illegible]
*35AC	26¼	30¼	27½	33,000	4.4	265	4.1	3	[illegible]	Side	Tecumseh	3	[illegible]
*47AC	28⅝	48⅜	31½	48,000	6.1	420	7.7	2	[illegible]	Side	Tecumseh	4	PFB400
*60AC	28⅝	48⅜	31½	61,000	7.4	455	7.7	3	[illegible]	Side	Tecumseh	5	FB500

Bryant—Bryant Mfg. Co., 2020 Montcalm St., Indianapolis [illegible]

Model No.	Cabinet Dimensions (In.) Height	Width	Depth	Nominal Rating (B.t.u.h.)	Kw. Input Total	Net Weight	Condenser Face Area (Sq. Ft.)	Rows Deep	C.f.m.	Air Discharge	Compressor Make	Hp.	Comp. Mfrs. Model No.
*24-562	26½	37	34½	24,000	2.9	325	[illegible]	2	[illegible]	[illegible]	Bendix-W.	2.5	[illegible]
*30-562	25½	37	34½	30,000	4.2	275	[illegible]	[illegible]	[illegible]	[illegible]	Tecumseh	3.0	[illegible]
*36-562	25½	37	34½	36,000	3.9	325	[illegible]	[illegible]	[illegible]	[illegible]	Bryant-C.	4.0	[illegible]
*48-562	28	41	36¼	48,000	4.9	390	7.0	[illegible]	[illegible]	Top	Bryant-C.	4.5	6[illegible]24-C122
*50-560	26	36⅝	45¾	57,000	6.1	565	[illegible]	[illegible]	2,475	Side	Bryant-C.	4.0	6D44-A679
*60-560	27½	36⅝	47¼	65,000	7.2	590	9.0	[illegible]	2,900	Side	Bryant-C.	5.5	6D48-B269
*75-560	29¾	73⅝	39¾	76,000	7.6	997	12.0	[illegible]	5,800	Side	[illegible]	7.5	[illegible]
[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]
*36-450	59⅝	40⅝	48	36,000	[illegible]	1.0441	[illegible]	[illegible]	4,500	To[illegible]	[illegible]—Gas Absorption	[illegible]	[illegible]
*54-450	60⅝	46⅝	56	54,000	[illegible]	1.5442	[illegible]	[illegible]	6,700	To[illegible]	[illegible]—Gas Absorption	[illegible]	[illegible]
[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]

†Approximate shipping weight.

Burnham—Burnham Corp., Warm Air & Cooling Div., Fourth & Main Sts., Belle Vernon, Pa.

Model No.	Cabinet Dimensions (In.) Height	Width	Depth	Nominal Rating (B.t.u.h.)	Kw. Input Total	Net Weight	Condenser Face Area (Sq. Ft.)	Rows Deep	C.f.m.	Air Discharge	Compressor Make	Hp.	Comp. Mfrs. Model No.
BRC-24	23⅞	30¼	27½	24,000†	3.0	205	3.6	2	1,750	Side	Tecumseh	2	B21U18
BRC-35-1-3	26¼	30¼	27½	35,000†	4.5	265	4.1	3	1,900	Side	Tecumseh	3	JE300
BRC-47-1-3	28⅝	48⅜	31½	47,000†	6.1	445	7.7	2	3,600	Side	Tecumseh	4	PFB400
BRC-60-1-3	28⅝	48⅜	31½	60,000†	7.4	455	7.7	3	4,200	Side	Tecumseh	5	FB500

†Performance @ ASRE—95° F. ambient and 45° F. evaporator temperature.

Capitolaire—National-U. S. Radiator Div. of Crane Co., Johnstown, Pa.

Model No.	Cabinet Dimensions (In.) Height	Width	Depth	Nominal Rating (B.t.u.h.)	Kw. Input Total	Net Weight	Condenser Face Area (Sq. Ft.)	Rows Deep	C.f.m.	Air Discharge	Compressor Make	Hp.	Comp. Mfrs. Model No.
RES-1AR-021	28¾	34	36	22,000†	[illegible]	400	8.34	3	2,500	Side	Tecumseh	2	JE200
RES-1AR-031-2	28¾	34	36	33,000†	[illegible]	430	8.34	3	3,000	Side	Tecumseh	3	JE300
RES-1AR-051-2	34½	40	49	54,000†	[illegible]	630	16.7	3	4,700	Side	Tecumseh	5	FB500
RAI-021	26	33	28	23,000†	3.9	210	5.0	3	2,300	Side	Tecumseh	3	B21U18
RAI-031-3	26	33	28	33,000†	3.9	245	5.0	3	2,300	Side	Tecumseh	3	JE200
RAI-041-3	30	40	36	49,000†	6.0	420	8.5	3	4,500	Side	Tecumseh	4	PFB400
RAI-051-3	30	48	28	58,000†	6.9	480	8.5	3	4,500	Side	Tecumseh	5	FB500

†Rated under ARI standard. RES models have centrifugal blower, RAI models have propeller fan.

Century—Century Engineering Corp., 221 Fourth Ave. SE., Cedar Rapids, Iowa

Model No.	Cabinet Dimensions (In.) Height	Width	Depth	Nominal Rating (B.t.u.h.)	Kw. Input Total	Net Weight	Condenser Face Area (Sq. Ft.)	Rows Deep	C.f.m.	Air Discharge	Compressor Make	Hp.	Comp. Mfrs. Model No.
*BB-1	20	22	22	11,500†	[illegible]	145	[illegible]	2	[illegible]	Side	Tecumseh	[illegible]	[illegible]
*VD-2	25½	28	25	19,500†	[illegible]	269	[illegible]	3	[illegible]	Side	Tecumseh	[illegible]	[illegible]
*BB-2	25½	28	25	23,500†	[illegible]	272	[illegible]	3	[illegible]	Side	[illegible]	[illegible]	[illegible]
*BB-3	28⅝	31½	34	36,000†	[illegible]	333	[illegible]	3	[illegible]	Side	[illegible]	5	[illegible]
*AB4-1	35	36	36	48,000†	[illegible]	625	[illegible]	3	[illegible]	Side	[illegible]	4	[illegible]
*AB5-1	35	42	42	60,000†	[illegible]	735	[illegible]	3	[illegible]	Side	Tecumseh	5	[illegible]

†Rated under ARI standard.

Clima-Twin—Round Oak Co. Inc. of Indiana, Dowagiac, Mich.

Model No.	Cabinet Dimensions (In.) Height	Width	Depth	Nominal Rating (B.t.u.h.)	Kw. Input Total	Net Weight	Condenser Face Area (Sq. Ft.)	Rows Deep	C.f.m.	Air Discharge	Compressor Make	Hp.	Comp. Mfrs. Model No.
RA313	31½	34½	34½	22,000	2.0	280	7.5	2	1,600	Top	Tecumseh	2	B21T18
RA343	31½	34½	34½	24,000	2.1	310	7.5	3	2,000	Top	Tecumseh	3	B21T18
RA353	31½	34½	34½	36,500	3.4	335	7.5	2	2,000	Top	Tecumseh	3	JE300
RA373	31½	37½	37½	38,000	4.1	370	7.5	3	2,800	Top	Tecumseh	3	JE300
RA374	31½	37½	37½	37,000	4.0	370	7.5	3	2,800	Top	Bendix-W.	3	YH-830
RA464	31½	37½	37½	46,000	4.9	440	7.5	3	3,600	Top	Tecumseh (2)	2	B21T18
RA474	31½	37½	37½	48,000	4.9	440	7.5	3	3,600	Top	Bendix-W. (2)	2	H-490
RA504	31½	37½	37½	61,500	6.3	520	11.9	3	4,200	Top	Tecumseh	5	PFB500

Clima-Twin-Aire—Peerless Corp., 1853 Ludlow Ave., Indianapolis 7, Ind.

Model No.	Cabinet Dimensions (In.) Height	Width	Depth	Nominal Rating (B.t.u.h.)	Kw. Input Total	Net Weight	Condenser Face Area (Sq. Ft.)	Rows Deep	C.f.m.	Air Discharge	Compressor Make	Hp.	Comp. Mfrs. Model No.
RA313	31½	34½	34½	22,000	2.0	280	7.5	2	1,600	Top	Tecumseh	2	B21T18
RA343	31½	34½	34½	24,000	2.1	310	7.5	3	2,000	Top	Tecumseh	3	B21T18
RA253	31½	34½	34½	36,500	3.4	335	7.5	2	2,000	Top	Tecumseh	3	JE300
RA373	31½	37½	37½	38,000	4.1	370	7.5	3	2,800	Top	Tecumseh	3	JE300
RA374	31½	37½	37½	37,000	4.0	370	7.5	3	2,800	Top	Bendix-W.	3	YH-830
RA464	31½	37½	37½	46,000	4.9	440	7.5	3	3,600	Top	Tecumseh (2)	2	B21T18
RA474	31½	37½	37½	48,000	4.9	440	7.5	3	3,600	Top	Bendix-W. (2)	2	H-490
RA504	31½	37½	37½	61,500	6.3	520	11.9	3	4,200	Top	Tecumseh	5	PFB500

Split Systems—Evaporator, Blower-Evaporator Units

Addison (Private Brand)—Addison Products Co., Addison, Mich.

Model No.	Cabinet Dimensions (In.) Height	Width	Depth	Capacity (B.t.u.h.)	Refrigerant Control	Net Weight	Coil Face Area (Sq. Ft.)	Coil Rows Deep	Blower C.f.m.	Blower R.p.m.	Blower Motor Hp.	Air Filter Dimensions (In.)
24A-A	14	19⅝	22	22,000	Cap.	42	2.2	3	800	...	...	(2) 20x20x1
35A-A	18	23¼	22	32,800	Cap.	80	3.1	3	1,200	...	...	...
47A-A	23	28⅝	22	45,000	Cap.	95	6.0	3	1,600	...	...	...
60A-A	23	28⅝	22	56,000	Cap.	95	6.0	3	1,900	...	...	...
(H) 90EB	25	64⅛	41	84,000	X Valve	265	7.2	3	3,000	635	½	(3) 16x20x1
(H) 120EB	25	64⅛	41	112,000	X Valve	490	8.0	3	4,000	685	1	(3) 20x20x1

†Rated under ARI standard.

AFC Comfortmaker—American Furnace Co., 1300 Hampton Ave., St. Louis 10, Mo.

Model No.	Cabinet Dimensions (In.) Height	Width	Depth	Capacity (B.t.u.h.)	Refrigerant Control	Net Weight	Coil Face Area (Sq. Ft.)	Coil Rows Deep	Blower C.f.m.	Blower R.p.m.	Blower Motor Hp.	Air Filter Dimensions (In.)
2AV	15	16	14⅞	22,500†	Cap.	40	2.28	3	800	...	...	...
30AV	15	16	18⅞	30,000†	Cap.	45	3.5	3	1,000	...	...	...
3AV	15	16	21⅝	35,000†	Cap.	50	3.6	3	1,200	...	...	...
4AV	15	16	25	47,500†	Cap.	60	4.5	3	1,600	...	...	...
5AV	15	16	29¼	62,000†	Cap.	67	5.3	3	2,000	...	...	...
85AV	15	16/23¾	45/29½	85,000†	Cap.	135	7.5	3	3,000	...	...	...
120AV	15	16/23¾	60¾/29½	24,000†	Cap.	150	10.5	3	4,000	...	...	...
[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]
[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]
[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]

†Rated under ARI standard. [illegible] available in horizontal and downflow types and in blower units.

AirEase—The Johnson Furnace Co., 2129 W. 117th St., Cleveland, Ohio

Model No.	Cabinet Dimensions (In.) Height	Width	Depth	Capacity (B.t.u.h.)	Refrigerant Control	Net Weight	Coil Face Area (Sq. Ft.)	Coil Rows Deep	Blower C.f.m.	Blower R.p.m.	Blower Motor Hp.	Air Filter Dimensions (In.)
*24AC	[illegible]	[illegible]	[illegible]	22,000	Cap.	42	2.2	3	800	...	...	...
*35AC	[illegible]	[illegible]	[illegible]	33,000	Cap.	80	3.1	3	1,200	...	...	...
*47AC	[illegible]	[illegible]	[illegible]	45,000	Cap.	95	6.0	3	1,600	...	...	...
*60AC	[illegible]	[illegible]	[illegible]	56,000	Cap.	95	6.0	3	1,900	...	...	...

†Rated under ARI standard. [illegible] available in horizontal flow.

Airtemp—Airtemp, Div. Chrysler [illegible] Box 1037, Dayton 1, Ohio

Model No.	Cabinet Dimensions (In.) Height	Width	Depth	Capacity (B.t.u.h.)	Refrigerant Control	Net Weight	Coil Face Area (Sq. Ft.)	Coil Rows Deep	Blower C.f.m.	Blower R.p.m.	Blower Motor Hp.	Air Filter Dimensions (In.)
1402-1	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]
(Group 153)	14¼	[illegible]	21	23¼	**	X Valve	85	3.2	2	...	...	...
(Group 154)	14¼	[illegible]	25	24	**	X Valve	90	3.2	2	...	...	...
1402-4	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]
(Group 155)	14¼	[illegible]	[illegible]	23¼	**	X Valve	85	3.2	2	...	...	...
(Group 156)	14¼	[illegible]	25	24	**	X Valve	70	3.2	3	...	...	...
(Group 157)	14¼	[illegible]	25	31¼	**	X Valve	75	3.2	3	...	...	...
[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]
[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]
[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]

†Rated under ARI standard. [illegible] 144,000 B.t.u.h.—5.45 kw., 49,000 B.t.u.h.—[illegible] kw., 56,000 B.t.u.h.—5.93 kw., 56,000 B.t.u.h.—5.95kw, 147,000 B.t.u.h.—[illegible] kw., 55,000 B.t.u.h.—6.60 kw., 56,000 B.t.u.h.—6.88 kw., 63,000 B.t.u.h.—7.55 kw. 150,000 B.t.u.h.—6.45 kw., 61,000 B.t.u.h.—6.83 kw., 62,000 B.t.u.h.—6.93 kw., 64,000 B.t.u.h.—7.03 kw., [illegible],000 B.t.u.h.—[illegible] kw., 89,000 B.t.u.h.—8.96 kw., 89,000 B.t.u.h.—9.10 kw., 83,000 B.t.u.h.—9.06 kw. **For capacity of evaporator coil [illegible] refer to manufacturers specification sheets.

Amana—Amana Refrigeration, Inc., Amana, Iowa

| Model No. | Cabinet Dimensions (In.) Height | Width | Depth | Capacity (B.t.u.h.) | Refrigerant Control | Net Weight | Coil Face Area (Sq. Ft.) | Coil Rows Deep | Blower C.f.m. | Blower R.p.m. | Bl

RACCA Plan--

(Continued from Page 1, Col. 3)

the committee, McCarty said, the members have the authority to develop an agreement among the trades and the contractor holding the commitment so that the work can be performed.

"The need for setting up the procedure has been growing for some time," he said. "The association has found that often when a refrigeration or air conditioning contractor has had the offer of maintenance and service work from a refinery, hotel, office building, or other facility, the offer could not be carried out because of the jurisdictional claims of some craft union not connected with the UA."

McCarty cited an instance where a hotel chain wished to contract out refrigeration and air conditioning maintenance and the craft union, under contract to this chain, prohibited such an arrangement because it furnished a maintenance man for 40 hours a week.

McCarty also stated that efforts to solve this type of problem were brought to a climax when support of the United Association was expressed by Joseph F. Monahan, general organizer of the UA, at the 1960 RACCA convention.

At that time Monahan indicated that the UA as well as other building trades realized the importance of backing up the contractors in respect to operations, maintenance, and service instead of just walking away from a job when completed.

The union official also expressed that the President's Committee of the 13 international crafts was the logical group that could supply the means to open the door for any refrigeration and air conditioning contractor who held commitments from owners for maintenance and service work.

McCarty urged contractors to avail themselves of the new plan for handling the jurisdiction problem.

He said contractors should bring the matter to the national association's attention by letter, explaining the situation regarding maintenance contracts. Following the receipt of the communication, association personnel would then take care of the submission to the President's Committee for consideration and findings.

Cooling Sales--

(Continued from Page 1, Col. 5)

should increase slightly by 1961.

Unit factory shipments of the larger central air conditioning equipment increased 5% in 1960 over 1959, but total dollar shipments dropped 11%, according to government figures. (This is one area where the government figures were rather sharply out of line with generally accepted higher estimates from industry sources, possible because of a lack of any central reporting agencies on much of the large equipment).

Exports of air conditioning and refrigeration equipment in 1960 hit a new high of approximately $135 million, a 22% increase over 1959, said the U. S. bureau.

'Hospital Cooling Vital'--

(Continued from Page 1, Col. 5)

administrator of a new hospital in Rockford, Ill., Brown writes: "There is not the tendency to postpone elective hospitalization that otherwise exists."

The Rockford hospital, he notes, was built to be air conditioned but lacked the necessary refrigeration equipment to provide cooling. After one summer of operation with the usual slump in occupancy the hospital board had refrigeration installed ahead of schedule. The following summer the occupancy was much higher.

Brown moved to Syracuse in 1958 to head planning of a new 300-bed community hospital, and was instrumental in having year-round air conditioning included in the plans.

This follows his own belief that "any hospital . . . will be obsolete before it is built unless it is fully air conditioned and with individual room temperature controls at least in patient areas.

"Each patient room should have its own thermostat, and 'temperature compatible' patients should be put in multiple bed rooms. A comfortable temperature for a teenager with nothing more than a broken bone may be quite different from that of a 70-year-old cardiac patient."

Syracuse Community hospital, which is due to open in 1962, is being constructed with this in mind. There will be no wards, only private and two-bed rooms. Each will have individual temperature control, and each will have its own exhaust to minimize recirculation of air.

"Such recirculation of air as may be used in a system should not spread airborne bacteria from one room to another," Brown writes. "Obviously there are certain areas such as surgery where there should be special high efficiency filtering and no recirculation at all."

Designed by the engineering firm of Robson & Woese, Inc., the Syracuse Community hospital system will employ 100% outdoor air in the patient rooms and operating and delivery areas. The latter two will be handled by special units that dehumidify, process, and clean the air.

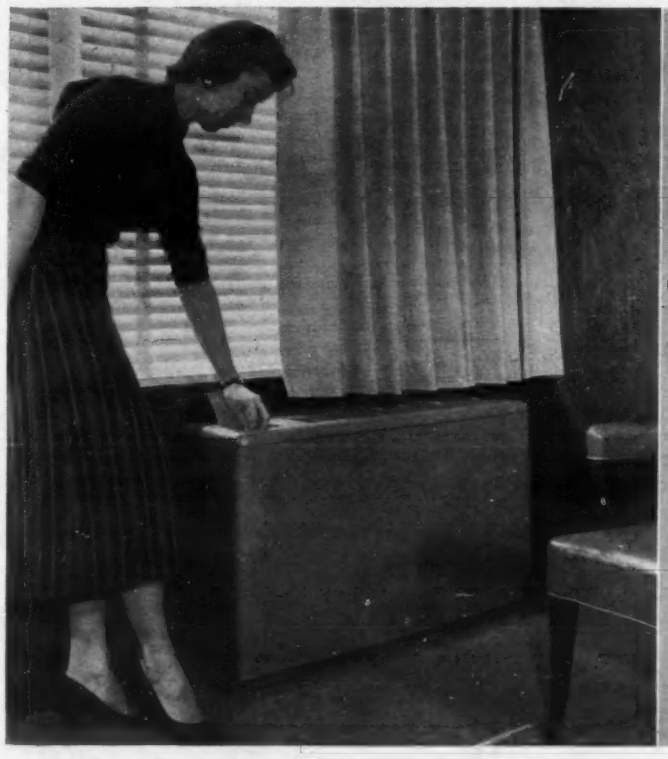
The Syracuse administrator notes that certain heating and cooling systems do not cost much more than a conventional heating and ventilating system, which does not provide year-round control. Both systems occupy about the same space, but he says over-all benefits are far greater from the more modern method.

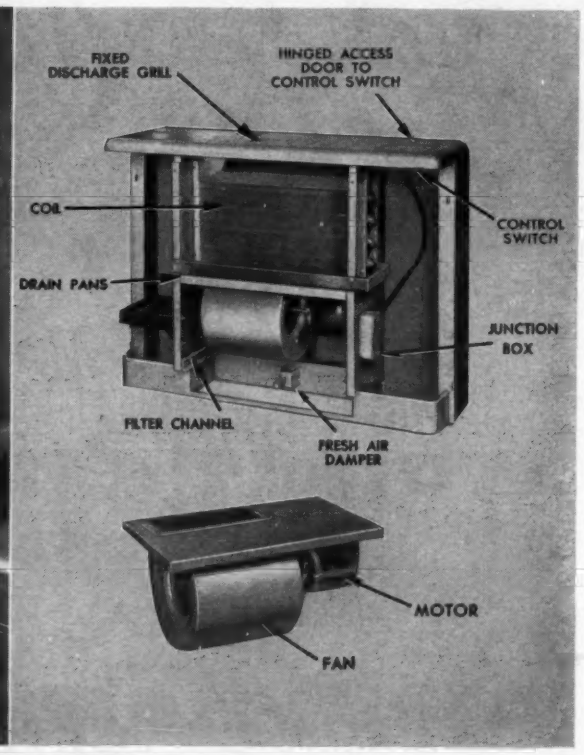
His point is strengthened by the fact that Syracuse Community hospital is considered a bargain by its planners in spite of many extras. They include automatic doors, a pneumatic tube system for records and small specimens, oxygen piped to each room, individual telephones, and radio and television controls for each patient, it was noted.

The hospital is also planned to permit future expansion to 500 beds, and auxiliary services such as kitchens, laboratories, and administrative offices are already sized for that increase.

With these and other features, Community hospital will cost $21,762 per bed. A nearby hospital of similar size and without many of these facilities cost $21,691 per bed four years ago, when constructions costs were lower.

Room Comfort is Occupant Controlled





with UNIT AIR CONDITIONING SYSTEM
by DUNHAM-BUSH

The Dunham-Bush unit system of air conditioning . . . with 'CR' room air conditioning units in all rooms and one central plant to handle the entire heating and cooling load . . . is ideal for any multi-room building.

Individual room control permits each occupant to select the conditions he desires—without affecting other rooms or zones. One unit handles cooling, heating and circulation of fresh, filtered air . . . quietly!

Perfectly suited for either new construction or existing buildings, the Dunham-Bush unit system requires no costly, difficult-to-install central duct system. A single piping system is utilized year 'round.

Units are available in 4 sizes from 220 to 600 CFM . . . for heating and cooling by water, direct expansion or steam; for vertical floor mounting in exposed, semi-recessed or fully recessed installation; for ceiling suspended, exposed or fully recessed installations.

Request Catalog #6014A containing complete specifications.

DUNHAM-BUSH

DUNHAM-BUSH, INC.

WEST HARTFORD 10, CONNECTICUT, U. S. A.

SALES OFFICES LOCATED IN PRINCIPAL CITIES